# TEXTILE TECHNOLOGY DIGEST

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## ABSTRACTS

### FIBERS A

EFFECT OF WEATHERING ON THE PROPERTIES OF VARIOUS TEXTILE FIBERS. PART 5. J. Lünenschloss and H. Kurth. Textil-Praxis 16, No. 1: 51-56 (1961). In German. Through BCIRA 41: 1128 (1961).
In continuation of previous articles (abstr. 872/61, 930/61, 1355/61, and 2177/61), the authors discuss the effect of fiber thickness on the tendering of polyamide, polyester, and polyacrylonitrile cables exposed to weather and light. Results from microscopical examination of the fibers (cross- and longitudinal sections) are shown in photomicrographs. (2332)

### Natural fibers A1

STRUCTURE OF THE SECONDARY WALL OF COTTON FIBERS. N. Y. Kordub. Tekstil. Prom. 20, No. 7: 19-22 (1960). In Russian. Through BCIRA 41: 1210 (1961).
The helically-coiled chains in cotton fiber were studied in relation to thickness of the cellulosic layer in the secondary wall of the fiber, removed from the bolls at different stages of maturity. Increased secondary wall thickness, associated with accumulation of cellulose during fiber growth, is accompanied by a decreased angle of inclination of the helically-coiled chains. The process of cellulose accumulation in the secondary wall continues for 25-30 days and then almost ceases. Formation of fibers and development of their main physico-mechanical properties are completed 50-55 days after boll development (optimum time for harvesting). (2333)

EVALUATING THE FIRE HAZARD OF COTTON. D. L. Kel'bert. Tekhnol. Tekstil. Prom. No. 4 (17): 173-174 (1960). In Russian. Through BCIRA 41: 1326 (1961).
Experiments showed that on prolonged heating of raw cotton without access of air, the disintegration process starts at 160° C and, at 220° C, gaseous and liquid decomposition products separate and the raw cotton is transformed into a carbonaceous mass. Increased moisture content of the raw cotton increases the spontaneous combustion temperature and, consequently, decreases the risk of fire. In cotton cleaning installations, clogging of the grids may cause local concentration of the heat (as a result of increased friction) and overheating to the temperature of spontaneous combustion. This may also happen in the presence of power impulses. (2334)

KAPOK FIBER IN SPINNING AND WEAVING. O. Roerich. Industrie Textile: 19-21 (Jan. 1961). In French. Through BCIRA 41: 1263 (1961).
The characteristics of the fiber and the production of yarns and fabrics are described to show that it is possible to obtain from pure Kapok normal yarns applicable in industry. (2335)

FELTING PROPERTIES OF DIFFERENT TYPES OF WOOL. A. Christ. Textil-Praxis (English ed.) No. 1: 44 (Mar. 1961).
The felting properties of German, Australian, Cape, and South American wools are compared. (2336)

THEORY FOR THE DEVELOPMENT OF WOOL FIBER CRIMP ON DRYING. T. D. Brown and W. J. Onions (Leeds Univ.). J. Textile Inst. 52: T101-T108 (Mar. 1961).
The changes of curvature or crimp occasioned by changes in the moisture content of segmented wool fibers are shown mathematically to depend upon the length changes in the cortical cells, and upon the diameter of the fiber and the relative proportions of the ortho- and para-sections, as well as, to a smaller extent, upon the ratio of their extension moduli. Experimental evidence suggests that there is adequate support for the theory. This change on drying is an important contribution to the apparent crimp of wool fibers. 9 refs. (2337)

### Manmade fibers A2

SPACE-AGE FIBER GOAL: STRENGTH AT 2000° F. Chem. Week 88: 61, 64 (Apr. 29, 1961).
Fibers and fabrics that retain high strength above 2000°F are being sought for space uses. Under study are ceramics, special alloys and refractory metals, siliceous fibers, carbonaceous residues. (2338)

NEW FIBERS FROM DU PONT. M. M. Christie (E. I. du Pont de Nemours & Co.). Am. Dyestuff Reptr. 50: P340-P342 (May 1, 1961).
The outstanding features and physical properties of the following fibers are discussed: Orlon Type 72 acrylic fiber for the cotton system; Orlon Sayelle bicomponent acrylic fiber; Antron trilobal nylon; Dacron Type 62 polyester fiber; and Lycra Spandex fiber. (2339)

FIBERS TODAY. PART 9. ACRYLIC FIBERS. J. W. S. Hearle. Textile Mfr. 87: 131-135 (Apr. 1961).
The constitution, production, structure, properties, and some of the main applications of acrylic fibers are described. (2340)

ACRYLIC FIBERS AND FABRICS. G. A. Briggs (Courtaulds Ltd). Textile Mfr. 87: 159-160 (Apr. 1961).
The range of Courtelle fibers and their use in knit, pile, and woven fabric constructions are discussed. (2341)

APPLICATION OF ORLON SAYELLE BI-COMPONENT FIBER IN KNITS. K. C. Bass, Jr. (E. I. du Pont de Nemours & Co.). Knitted Outerwear Times 30: 176-177 (Apr. 24, 1961). (2342)

RECENT ADVANCES IN ORLON ACRYLIC FIBER FOR KNITWEAR. J. C. Hoscheit and T. F. Carroll, Jr. (E. I. du Pont de Nemours & Co.). Knitted Outerwear Times 30: 174-175 (Apr. 24, 1961).
The development and application of Orlon 44 acid dyeable fiber, Orlon 28 durably slickened fiber, and Orlon 72, a fiber for blending with cellulosics, are discussed. (2343)

DEVELOPMENTS IN ACRILAN, ACRILAN-SPECTRUM, AND CADON. C. C. Madeira, Jr. (Chemstrand Corp.). Knitted Outerwear Times 30: 172-173 (Apr. 24, 1961).
Knitwear potentials for these fibers are briefly outlined. (2344)

DEVELOPMENT OF ORLON SAYELLE BI-COMPONENT ACRYLIC FIBER. M. Q. Webb (E. I. du Pont de Nemours & Co.). Knitted Outerwear Times 30: 177-178A (Apr. 24, 1961).
The theoretical background forming the basis for the development of Orlon Sayelle fiber, its properties, and its response to dyeing and finishing conditions are described. 10 refs. (2345)

NECESSITY, INVENTION, AND RAYON. PART 2. J. G. Evans (Bradford Dyers' Assoc. Ltd). Man-Made Textiles 38: 44-46 (Apr. 1961).
Progress in developing water repellent, stain and dirt repellent, and flameproof and heat resist finishes for acetate and viscose fibers is reviewed. (2346)

SUNLIGHT DEGRADATION OF VARIOUS TYPES OF RAYON STAPLES. PART 1. SUNLIGHT DEGRADATION OF RAYON STAPLES. PART 2. SUNLIGHT DEGRADATION OF RAYON STAPLE FABRICS. R. Kotake and T. Okamoto. J. Soc. Textile Cellulose Inds. Japan 17, No. 1: 11-20 (1961). In Japanese (English summary). Through BCIRA 41: 1329 (1961).
Part 1. Sunlight and Fade-o-meter exposures were made. All the staples showed similar degradation curves but the high tenacity fibers retained superior strength and elongation. Part 2. A standard muslin was woven from high tenacity rayon staple, regular rayon staple, and cotton, and each fabric was exposed to sunlight for five months. Changes in dry and wet strength and elongation, tear strength, and flexing abrasion were measured. The fabric from high tenacity rayon staple was superior. (2347)

POLYPROPYLENE FIBERS REACH FOR THE BIG MARKETS. P. W. Sherwood. Can. Textile J. 78: 51-52 (Apr. 14, 1961).
The market potential of polypropylene fibers is examined in the light of its expected low cost, its high tensile strength, its low density, and its high reversible elongation. The fiber blends well with wool, yields a high quality, low-cost cloth when blended with low-grade wool waste. (2348)

ARE PVA FIBERS COMING INTO FAVOR? J. W. S. Hearle. Skinner's Silk & Rayon Record 35: 348-350 (Apr. 1961).
The structure and characteristics of Vinal 5F and FO (Air Reduction Chem. Co.) are described, and their commercial possibilities are cited. (2349)

NEW TECHNIQUES AND TECHNOLOGY IN THE FIELD OF VISCOSE FIBER PRODUCTION. E. M. Mogilevskii. Khim. Volok. No. 1: 3-9 (1960). In Russian. Through BCIRA 41: 1221 (1961).
Review. 79 refs. (2350)

## YARN PRODUCTION B

FIBER BLENDING FOR WOOLEN YARNS. PART 1. L. Bellwood. Wool Rev. 34: 29, 41 (Apr. 1961).
Considerations in the choice of fibers are discussed. (2351)

FIBER BLENDING ON THE COTTON SYSTEM. W. Nutter (T. M. M. (Research) Ltd). Textile Weekly 61 (1): 772-779 (Apr. 7, 1961).
The basic problems in cotton and manmade fiber blending on the cotton system and modern developments for coping with them are discussed. The economics and efficiency of blowroom, card, ribbon lap, and drawframe blending are also analyzed. (2352)

MODIFIED MACKIE CARPET YARN SYSTEM. James Mackie & Sons Ltd. Skinner's Silk & Rayon Record 35: 342-345 (Apr. 1961).
The features, operation, and production potential of the system are described. (2353)

PASTOL AS DRESSING AGENT FOR VISCOSE STAPLE FIBER. S. M. Geisberg and N. K. Shemkov. Khim. Volok. No. 1: 53-54 (1960). In Russian. Through BCIRA 41: 1247 (1961).
Pastol is an emulsified mixture of soaps and oils. Its uses and advantages as a dressing agent for viscose rayon staple are discussed. (2354)

ABRIDGED SPINNING PLAN FOR STAPLE FIBER YARN. S. V. Antipin. Tekstil. Prom. 20, No. 6: 60-61 (1960). In Russian. Through BCIRA 41: 1040 (1961).
Experiments showed that the quality of yarn is not impaired by omitting one speedframe passage. (2355)

NEWS IN SPINNING TECHNOLOGY. I. A. Ermakov and P. P. Makarin. Tekstil. Prom. 20, No. 5: 59-62 (1960). In Russian. Through BCIRA 41: 1036 (1961).
New spinning rings, a new method of cylinder covering, and inclined cleaning devices in mixing units are described. (2356)

PROCESSING ORLON ACRYLIC TOW ON THE TURBO STAPLER. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. Apr. 1961. 20 p. Bull. OR-113 (replaces Bull. OR-101). Free. (2357)

STUDY OF ORLON PROCESSING VARIABLES ON TURBO STAPLER. R. A. Wells (E. I. du Pont de Nemours & Co.). Knitted Outerwear Times 30: 15-17 (May 1, 1961).
Results of a study on the effect of processing variables and machine settings on fiber shrinkage are summarized. (2358)

CHECK YOUR OPENING, PICKING, AND CARDING WASTE. R. A. Hudson. Textile Bull. 87: 54, 56 (May 1961).
Pointers on reducing unnecessary cotton waste. (2359)

## Opening, picking, fiber preparation B1

NEW OPENING AND CLEANING METHODS IN THE COTTON SPINNING MILL. F. Markus. Textil-Praxis (English ed.) No. 1: 1-3 (Mar. 1961).
The construction and operation of the Tritzschler Multi-Point opener are described. (2360)

DETERMINATION OF THE DEGREE OF COTTON OPENING ON CLEANING MACHINES. H. Perner and E. Schlegl. Faserforsch. u. Textiltech. 11, No. 12: 570-578 (1960). In German. Through BCIRA 41: 1026 (1961).

Methods of determining the degree of opening (flock weight, sinking time, and apparent specific volume) are compared with a view to finding a rapid testing method for this purpose. Determination of the apparent specific volume appears to be the least time-consuming, the most convenient, and a fairly accurate method. Owing to the low variation coefficient, only a small random-sample range is required. Coefficients are proposed for evaluating the opening efficiency of a machine, and an empirical equation is developed to express the optimum opening process. (2361)

PECULIARITIES OF VARIOUS TYPES OF COTTON DISTRIBUTORS. B. V. Kostin. Tekstil. Prom. 20, No. 5: 23-27 (1960). In Russian. Through BCIRA 41: 1023 (1961).

Rake-type and tape-type distributors for cotton fibers fed from the opening unit to the picker are discussed, and a pneumatic system developed by the author, which can be adapted to feed two or even four machines simultaneously, is described. (2362)

KINEMATIC ANALYSIS OF THE MECHANISM OF PEDAL REGULATORS IN SINGLE-PROCESS PICKERS. A. L. Feigenberg. Tekhnol. Tekstil. Prom. No. 4 (17): 76-83 (1960). In Russian. Through BCIRA 41: 1249 (1961).

It is shown that the pedal mechanism of single-process pickers does not respond immediately and accurately to the changes in the layer thickness fed. Factors responsible for this inadequacy are discussed. (2363)

## Carding and combing B2

MECHANIZATION OF CARD CLEANING. R. A. Gakel. Tekstil. Prom. 20, No. 4: 24-28 (1960). In Russian. Through BCIRA 41: 1029 (1961).

A vacuum-cleaning installation for the automatic cleaning of carding machines is described, and its advantages are enumerated. (2364)

AUTOMATIC CONTROL OF CARD SLIVER. J. Elias. Deut. Textiltech. 11, No. 1: 11-13 (1961). In German. Through BCIRA 41: 1252 (1961).

Possibilities of improving and shortening the technological process are discussed, and a device for the automatic control of card slivers by means of a variable friction drive is described, with reference to its effect on the sliver regularity. (2365)

CONTINUOUS CLEANING OF CARDS. Industrie Textile: 23-24 (Jan. 1961). In French. Through BCIRA 41: 1251 (1961).

The suction arrangement described effects total stripping of the large cylinder after each operating cycle so that clogging is prevented and cleaning of the clothing at regular intervals becomes unnecessary. (2366)

PHOTO-RELAY FOR FEED CONTROL ON CARDING MACHINES. B. V. Salozhin. Tekstil. Prom. 20, No. 4: 72-73 (1960). In Russian. Through BCIRA 41: 1028 (1961).

The device is described and illustrated. It operates reliably for a long period and needs only occasional inspection (every 2 months). (2367)

DEPENDENCE OF WIRE DIAMETER ON CARD FILLET NUMBER. B. Babadzhanov. Tekhnol. Tekstil. Prom. No. 4 (17): 84-85 (1960). In Russian. Through BCIRA 41: 1250 (1961). (2368)

MECHANIZATION OF CARD SLIVER AND LAP TRANSPORT. I. P. Volkov and A. S. Udalov. Tekstil. Prom. 20, No. 6: 56-57 (1960). In Russian. Through BCIRA 41: 1027 (1961). (2369)

SLIVER LAP MACHINE LS-235-3. Tekstil. Prom. 20, No. 4: 31 (1960). In Russian. Through BCIRA 41: 1030 (1961).

This new machine is designed to combine 16 to 20 cotton or rayon-staple slivers, No. 0.22-0.36, into laps, No. 0.013-0.03, to be further processed on high-draft drawframes or ribbon lap machines. The total draft on the machine is 1.032. The feed table is lowered by 115 mm as compared with previous constructions, and on both sides of the table are arranged automatic stop motions, operating when the sliver breaks. The machine produces laps 235 mm wide, weighing 4-9 kg, at a rate of 156-211 kg/hr. (2370)

## Drawing and roving B3

DETERMINATION OF FIBER STRAIGHTENING BY RADIOGRAPHY. V. A. Protasova. Tekhnol. Tekstil. Prom. No. 4 (17): 69-75 (1960). In Russian. Through BCIRA 41: 1257 (1961).

It is shown that the fibers are straightened during passage through the first machines of the technological process; subsequent drafting increases the effect only insignificantly. The straightening action of drafting systems used in abridged spinning are more effective than that of the conventional speedframes. Radiography can be used in examining the arrangement of fibers in the product and in studying spinning processes. Production of roving for yarn No. 32 according to the abbreviated spinning plan leads to a reduced total draft but has no adverse effect on the straightness of fibers. The drafting irregularity, resulting from the reduced number of passages, is not affected by fiber straightness. (2371)

PRINCIPLES OF SELECTING DISTANCES IN DRAFTING MECHANISMS. A. V. Teryushnov. Tekstil. Prom. 20, No. 6: 20-25 (1960). In Russian. Through BCIRA 41: 1035 (1961).

Factors to be taken into account when setting the distances between the drafting roll pairs are discussed with a view to determining the optimum setting for various cotton qualities and cotton/viscose rayon staple blends. Correct setting increases the drafting efficiency of the device, decreases the irregularity of the product, improves its strength, and reduces the breakage frequency. (2372)

IMPROVED METHOD OF WRAPPING DRAWFRAME SLIVERS. B. K. Basu (English Sewing Cotton Co. Ltd). Textile Recorder 78: 52-53, 61, 71 (May 1961).

The purpose of this article is to describe a special technique developed for measuring off the lengths of sliver for wrapping mechanically, and to outline the results of experiments carried out to compare this new technique with the conventional system using a hand-operated wrap block. The mechanical wrapping eliminates the human errors involved in measuring the length of sliver by the drum, reduces the manual effort required from the operative during the testing, and eliminates the loose fly which is liberated into the air when wrapping is done in the normal way. (2373)

STUDY OF THE FRICTION ZONES IN DRAFTING DEVICES. I. A. Samoilov. Tekstil. Prom. 20, No. 7: 22-26 (1960). In Russian. Through BCIRA 41: 1254 (1961).
Experimental results show that in all double- and single-apron drafting systems examined, the friction zones differ from those determined on the basis of theoretical studies. Therefore in order to improve the drafting process, it is necessary to develop a drafting roller pair, the friction zones of which would correspond to the theoretical. (2374)

AUTOMATIC CONTROL OF THE DRAFTING PROCESS. S. S. Kovner. Tekstil. Prom. 20, No. 7: 26-29 (1960). In Russian. Through BCIRA 41: 1255 (1961).
The basic requirements concerning the construction of the scanner (ability to signal both count irregularities and changes in the statistical fiber composition) and of the regulating device (possibility of adjusting the speed of the feed- and of the drawing-rollers) are discussed, and some practical results are reported. (2375)

ECONOMIC ASPECTS OF MODERN COTTON DRAWING FRAMES. F. Walz. Textil-Praxis (English ed.) No. 1: 11-15 (Mar. 1961).
In this review, the author discusses the historical development, record improvements (Shirley 3 over 4 drawing system), the present state, efficiency comparison of drawframes, installation and power costs, effect of cans 40 and 42 in. high, limits of can sizes, purchase of new drawframes for existing spinning mills, and drawing systems with automatic can-change. (2376)

AUTOMATIC CAN EXCHANGE DURING DRAWING. Industrie Textile: 25-26 (Jan. 196 ). In French. Through BCIRA 41: 1256 (1961).
The device described operates continuously and automatically, whereby the number of empty cans moved forward to replace the expelled full cans is practically unlimited. (2377)

IRREGULARITY DECREASE OF SLIVERS ON DRAW-FRAMES LVS-305. P. I. Drundin. Tekstil. Prom. 20, No. 7: 62-63 (1960). In Russian. Through BCIRA 41: 1253 (1961).
In this high-draft drawframe, the two back lines have fluted rollers. The partial draft between the drawing-roller pairs V and IV is 1.4, between IV and III 1.57, between III and II 1.66-2.26 and between II and I 3.44. In 40 tests carried out in one month, the sliver irregularity on short sections was 6-6.2%, i.e. 15% lower as compared with that of slivers from the conventional drawframes (7-7.7%). (2378)

SLIVER REGULATING DEVICES. PART 2. H. Needham and W. Parkin. Wool Rev. 34: 14-15 (Apr. 1961).
The features and operation of various mechanical-electrical types of regulating devices are described. (2379)

OPTIMA SLIVER REGULATING DEVICE. E. Schenkel and A. Drescher. Textil-Praxis (English ed.) No. 1: 3-10 (Mar. 1961).
The first experiments on the Optima device showed measurable regularity improvement throughout the whole spinning process, which is expressed in the quality of the respective product. The experiments were carried out on one cotton quality only. The effect of the wear of the regulating elements on the efficiency of the device cannot be evaluated yet. (2380)

## Spinning, winding, twisting B4

ROLE OF AIR DRAG IN RING SPINNING. A. E. De Barr (Shirley Inst.). J. Textile Inst. 52: T126-T139 (Mar. 1961).
The effects of air drag on the shape of the balloon formed in ring spinning are discussed, and it is shown that air drag can be responsible for a large proportion of the tension in the yarn in ring spinning. Air drag also limits the maximum attainable balloon diameter, which is shown to be approximately independent of balloon height and spindle speed and to depend mainly on yarn count and ring size. The finer the yarn, the smaller is the maximum attainable balloon diameter. The effects of air drag on the tension required to prevent balloon collapse are also considered. 8 refs. (2381)

STUDY OF THE DRAFTING PROCESS AND YARN FORMATION WHEN DOUBLING TWO ROVINGS. I. I. Finkelshtein. Tekhnol. Tekstil. Prom. No. 4 (17) 93-101 (1960). In Russian. Through BCIRA 41: 1258 (1961).
When two rovings are passed simultaneously through the drafting system, one of them is constantly displaced with respect to the other. This is one of the causes of increased irregularity of the product, and breaking of the sliver delivered by the drafting system is more probable than with single rovings. (2382)

DEVICE FOR MEASURING THE LOAD ON SPINNING MACHINE PRESSURE ROLLERS. V. S. Goritskii, I. A. Samoilov, and D. P. Suchkov. Tekstil. Prom. 20, No. 5: 28-30 (1960). In Russian. Through BCIRA 41: 1037 (1961).
The device described consists of a closed flat spring to which is fixed an indicator and two exchangeable blocks, by means of which the device is fitted into corresponding cross-pieces of the drafting mechanism. The device is weighted in the same manner as the usual pressure roller. The deformation of the spring, transmitted by a lever system to the vertical coupling rod of the indicator, is read off the indicator scale calibrated in kg. The exchangeable rods make it possible to use the device on various types of drafting mechanisms with a lever weighting system. (2383)

CONTROL RING SYSTEMS AND CHOICE OF TRAVELER WEIGHT. F. A. Greenwood (T.M.M. (Research) Ltd). Textile Mfr. 87: 140-144 (Apr. 1961).
Practical methods of calculating optimum spindle speeds and traveler weights are described, and the choice of an effective balloon control system is discussed. (2384)

HEBUCOFIL METHOD OF DUST ELIMINATION AND THREAD REMOVAL ON RING SPINNING FRAMES. H. Bühler. Melliand 42, No. 2: 55-60 (1961).
The construction and mechanism of the Rieter suction installation Hebucofil for removing dust and broken ends on ring spinning machines are described, with reference to the analysis of dust formation, sources of dust, methods of dust elimination and rules for effective dust removal (these rules were used as a basis for the development of the Hebucofil suction installation). (2385)

DEVELOPMENT OF THE MODERN SPINNING MOTOR FROM THE SQUIRREL-CAGE INDUCTION MOTOR. H. Claviez. Melliand 42, No. 2: 65-74 (1961).
The development of the double-wound motor, whose characteristics are particularly adapted to the technological spinning conditions, is discussed and its advantages are pointed out (reliable start, efficiency, elimination of high end-break frequency, etc.). (2386)

AIR-DRAG AND RING-TRAVELER FRICTION IN RING SPINNING. A. E. De Barr (Shirley Inst.). Textile Mfr. 87: 136-139 (Apr. 1961).
The effect of air-drag and ring-traveler friction on yarn tension, and hence on balloon shape, is examined, and the calculation of optimum spinning conditions on the basis of these factors is discussed. See also abstr. 899/60. (2387)

NYLON RING TRAVELERS. W. Franke. Melliand 42, No. 2: 62 (1961).
The advantages and limitations of nylon travelers are noted. (2388)

TWISTING DU PONT ZERO TWIST NYLON. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. Apr. 1961. 7 p. Bull. N-143 (replaces Bull. N-115). Free.
Suggestions for redrawing, downtwisting, and uptwisting are presented. (2389)

IMPARTING TWIST TO VISCOSE FIBERS. M. Kopa. Tekstil. Prom. 20, No. 4: 78-81 (1960). In Russian. Through BCIRA 41: 1043 (1961).
Mechanical, chemical, and physical methods are reviewed, and methods for determining twist and its stability are briefly outlined. (2390)

COMPARATIVE SPINNING TESTS BETWEEN THE FLYERLESS OPERATING DECORDISATOR METHOD AND THE CONVENTIONAL SPINNING PROCESS. W. Frenzel and G. Albrecht. Faserforsch. u. Textiltech. 11, No. 12: 559-569 (1960). In German. Through BCIRA 41: 1041 (1961).
Comparison of the yarns spun by the flyerless decordisator method and by the usual method showed that the yarns produced by omitting the flyer and replacing it by the roving twister with 4-, 6-, or 8-fold doubling have a considerably greater regularity. For coarse yarns, the card slivers can be fed directly to the roving twister. (2391)

## Yarns B5

PLANNING THE STRENGTH OF TWO-COMPONENT BLENDED YARN. E. I. Birenbaum. Tekhnol. Tekstil. Prom. No. 4 (17): 35-41 (1960). In Russian. Through BCIRA 41: 1261 (1961).
Formulas are given, by means of which, by using the small-sample method, it is possible to predetermine the breaking length of the blended yarn for any component ratio. (2392)

TRI-LOBAL MULTIFILAMENT NYLON YARN: SUGGESTED TECHNIQUES FOR WOVEN FABRICS AND GARMENTS. Brit. Nylon Spinners Ltd. Advance Report No. 36. Mar. 1961. 2 p.
Recommendations for weaving, dyeing, finishing, and making-up. (2393)

ROTOSET YARN OF TYPE 285 DU PONT NYLON FOR WEAVING. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. Oct. 1960. 12 p. Bull. NP-14. Free. (2394)

SHIPPING INFORMATION--SUPER CORDURA. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. Apr. 1961. 4 p. Bull. R-42 (replaces Bull. R-40). Free. (2395)

PROPERTIES AND USE OF TEXTURED YARNS: ANILON AND MIRLAN. M. Pavek. Textil 16, No. 1: 14-17 (1961). In Czech. Through BCIRA 41: 1044 (1961).
Devices constructed in Czechoslovakia and abroad for the production of textured yarns are reviewed (Anilon is equivalent to Ban-Lon and Mirlan to Taslan). (2396)

PRINCIPLES OF BULKED YARN MANUFACTURE. PART 4. G. R. Wray. Textile Recorder 78: 54-56 (May 1961).
In this concluding article the author deals with stuffer box crimping and with the physical properties of the various types of crimped filament yarns. (2397)

TEXTRALIZED YARNS FOR THE FUTURE: A BROADER SPECTRUM. A. L. Trifunovic (Joseph Bancroft & Sons). Knitted Outerwear Times 30: 171-172 (Apr. 24, 1961).
The research trends in developing textured yarns tailored to meet specific end requirements are briefly reviewed. (2398)

ADVANCES IN TEXTURED NYLON FILAMENT FOR KNITWEAR. J. W. Bolmeyer (E. I. du Pont de Nemours & Co.). Knitted Outerwear Times 30: 173 (Apr. 24, 1961).
The development of nylon 288 specifically engineered for texturing and of Antron trilobal multifilament textured yarns for use in knitwear is discussed. (2399)

TECHNOLOGY OF STRETCH YARN PRODUCTION. G. V. Sokolov. Khim. Volok. No. 1: 54-60 (1960). In Russian. Through BCIRA 41: 1264 (1961).
Various systems for the production of stretch yarns are described, and particular attention is given to the Scragg Crimp Spin machine, the Russian GIPROIV machine, and a machine manufactured by Gebrüder Ouboter. (2400)

EFFECT OF DRESSING AGENTS ON THE STRENGTH OF THE BOND BETWEEN TIRE CORD AND RUBBER. T. V. Ionova, R. V. Uzina, E. M. Mogilevskii, Z. A. Rogovin, and N. A. Segalevich. Khim. Volok. No. 1: 30-31 (1960). In Russian. Through BCIRA 41: 1277 (1961).
The presence of dressing agents (Nevvol and Avirol) on viscose rayon tire cord caused a reduction in the strength of the bond between the cord and rubber compared with the strength of that between untreated cord and rubber. (2401)

# FABRIC PRODUCTION C

## Warping, slashing, yarn preparation C1

EFFECT OF SIZING VISCOSE RAYON FILAMENTS ON THE CREPE EFFECT OF FABRICS. M. N. Tsalyuk. Tekstil. Prom. 20, No. 5: 50-51 (1960). In Russian. Through BCIRA 41: 1059 (1960).
A sizing composition, incorporating olein soap (6.75 g), cottonseed oil (1.31), glycerine (0.37) and gelatine (0.56), applied to the filament yarn before twisting, gave a first-quality crepe fabric. (2402)

AUTOMATIC CONE WINDER. J. Kaltental. Textil-Praxis (English ed.) No. 1: 23-24 (Mar. 1961).
Features and operation of the Schlafhorst Autoconer are noted. See also abstr. 73/61. (2403)

ELECTRICAL TEMPERATURE REGULATORS IN THE DRYING CHAMBER OF THE SIZING MACHINE. P. Kasperavichyus. Tekstil. Prom. 20, No. 4: 56-57 (1960). In Russian. Through BCIRA 41: 1058 (1961).
Various modifications of the device, developed by the author, are described and a circuit diagram is given. (2404)

SOME EXPERIMENTAL DATA ON THE FRICTION COEFFICIENT IN THE FRICTION CLUTCH ON SIZING MACHINES. Z. V. Shamrai. Tekhnol. Tekstil. Prom. No. 4 (17): 114-116 (1960). In Russian. Through BCIRA 41: 1275 (1961).
The value for the friction coefficient between felt and the cast-iron roller decreases with increasing rate of the relative movement of the rubbing surfaces. On increasing the specific load, the coefficient increases at first and then decreases, the decrease being particularly rapid as a result of lubrication, clogging, and wetting of the rubbing surfaces. (2405)

USE OF MODERN HOMOGENIZERS FOR INCREASING SIZING EFFICIENCY. K. Ramaszeder. Deut. Textiltech. 11, No. 1: 17-21 (1961). In German. Through BCIRA 41: 1276 (1961).
Advantages arising from the use of homogenizers in the preparation of starch sizes are enumerated, e.g. uniform and accurately adjustable particle size, reduced costs, saving of starch, and reduction in the number of warp breakages. (2406)

PROBLEM OF CONTINUOUS WARPING. A. V. Kuligin. Tekstil. Prom. 20, No. 4: 37-40 (1960). In Russian. Through BCIRA 41: 1055 (1961).
Experiments showed that, at a low breakage frequency, continuous warping is of greater advantage than the discontinuous process. Discontinuous warping complicates winding and warping, especially of dyed yarns, whereby the amount of waste and the production costs increase appreciably. (2407)

WARPING TRICOT BEAMS OF PRODUCER TWIST DU PONT NYLON. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. Mar. 1961. 12 p. Bull. N-141 (replaces Bull. N-98). Free. (2408)

YARN WINDING DENSITY ON WEAVER'S BEAMS. V. I. Bazhenova and S. M. Glazamitskaya. Tekstil. Prom. 20, No. 7: 68-69 (1960). In Russian. Through BCIRA 41: 1274 (1961).
It has been found that relaxation of the yarn during winding, in conjunction with a reduced winding density, improves the physico-mechanical properties of the yarn and reduces the warp breakage frequency during weaving. The present methods of warp preparation do not take into account the relaxation properties of the warp; this results in impaired quality of the yarn and excessive breakage frequency on the loom. (2409)

MODERNIZATION OF COP WINDING MACHINES. A. V. Egorychev. Tekstil. Prom. 20, No. 6: 61-62 (1960). In Russian. Through BCIRA 41: 1054 (1961). (2410)

DELERUE WINDING SYSTEM AND THE DELERUE ROCKET. W. Böttger. Textil-Praxis (English ed.) No. 1: 20-23 (Mar. 1961).
Features and operation of the rocket winder are described, and the preparation and advantages of the super-cops for dyeing, weaving, and knitting are discussed. (2411)

ELECTRONIC CONTROL IN WARP PREPARATION. Crowther Ltd. Textile Weekly 61 (1): 978, 980 (Apr. 28, 1961).
Features of the electronically controlled Crowther B and C warping machines are briefly noted. (2412)

## Weaving C2

NEW AUTOMATIC LOOMS. Tekstil. Prom. 20, No. 5: 36-38 (1960). In Russian. Through BCIRA 41: 1060 (1961).
Technical characteristics are given for the four-shuttle loom AT-120-1, the two-shuttle loom AT-2-100-L, and the single-shuttle loom AT-120-L. (2413)

CORRECT USE OF CONTROL MECHANISMS ON LOOMS. B. I. Damaskin and Y. P. Sidorov. Tekstil. Prom. 20, No. 6: 27-31 (1960). In Russian. Through BCIRA 41: 1066 (1961). (2414)

REMARKS ON THE QUALITY OF JACQUARD PAPER CARDS. H. Zeitler. Deut. Textiltech. 11, No. 1: 22-25 (1961). In German. Through BCIRA 41: 1281 (1961).
Qualitative evaluation of jacquard paper cards must be based on determination of the weight/area, strength, and humidity of the material, as well as the hardness and size variations in dependence of relative humidity. Each paper-card delivery by the manufacturer should be accompanied by a quality certificate indicating the climatic conditions at which the consumer is able to use the cards without interferences during production. (2415)

LOOMFIXER AND HIS JOB. PART 29. W. Westbrook. Textile Bull. 87: 83-84 (May 1961).
Pointers on determining the type of lubricant, the amount needed, the frequency of application, the method of application, and the sequence in which the lubricant is to be applied. (2416)

SPECIALIZED PIRN-CHANGING. George Hattersley & Sons Ltd. Textile Weekly 61 (1): 780 (Apr. 7, 1961).
The use of the Fischer TM2P two color pick-and-pick pirn changer on the Hattersley 405 standard worsted loom is described. (2417)

HIGH SPEED SMALLWARES LOOMS. Adolphe Saurer SA. Textile Recorder 78: 77 (May 1961).
New features in the 22Ba-60 and 22Bb-60 semi-automatic, multi-shuttle looms include the application of electric warp stop motions for warp and weft and on the back reed, provision for larger weft packages, and the use of special metals and alloys at various points. (2418)

INVENTION OF LOOM WITH HOOK BARS AT THE END OF THE 17TH CENTURY INITIATES A NEW ERA. J. Pilisi. Industrie Textile: 45-50 (Jan. 1961). In French. Through BCIRA 41: 1279 (1961).
The history of ribbon weaving is reviewed, with particular reference to the patents applied for in various countries since 1604. (2419)

USE OF WOVEN OVERPICK BELTS. H. Gerischer. Deut. Textiltech. 11, No. 1: 26-27 (1961). In German. Through BCIRA 41: 1283 (1961).
The use of woven overpick belts from polyamide filament cord is recommended in particular for light- and medium-weight looms. Directions are given for their use. (2420)

AUTOMATIC RIBBON WINDING MECHANISM ON RIBBON LOOMS. V. A. Nifontov. Tekstil. Prom. 20, No. 5: 62-64 (1960). In Russian. Through BCIRA 41: 1062 (1961). (2421)

DEVELOPMENTS IN MOQUETTE, PLUSH, AND CARPET LOOMS. I. S. Porter (Wilson & Longbottom Ltd). Textile Mfr. 87: 159 (Apr. 1961). (2422)

FATIGUE AND ITS INFLUENCE ON WORK PERFORMED, WITH A CASE STUDY FROM A WEAVING MILL. H. Hellmann. Textil-Praxis (English ed.) No. 1: 24-30 (Mar. 1961).
Following a discussion of fatigue as a physiological process, the factors affecting it, and its measurement, the author presents a study of the relationship between weaving, fatigue, and recuperation. (2423)

AUTOMATIC WEFT CHANGE. L. Berger. Industrie Textile: 35-36 (Jan. 1961). In French. Through BCIRA 41: 1282 (1961).
The automatic change motion is described, and a circuit diagram is given. (2424)

AUTOMATION OF THE WEAVING PROCESS BY MEANS OF THE VALENTIN BOX LOADER. H. Sannig. Melliand 42, No. 2: 84-89 (1961).
The mechanism and operation of the Valentin automatic pirn replenishing device is described in detail. (2425)

BREAKTHROUGH IN SHUTTLELESS WEAVING. J. J. Vincent (Manchester Coll. Sci. & Technol.). Textile Weekly 61 (1): 829-830, 859-860 (Apr. 14, 1961).
The solid friction technique of weft insertion carries the development of gaseous and fluid-jet looms a logical step forward to the stage where the pick of weft is the only thing that is inserted in the warp shed, and the speed of the pick is the speed of the picking element. The simplest application of the solid-friction method consists of feeding the yarn into the nip between two discs rotating in opposite directions with high constant surface speeds; alternatively the nip can be formed by bringing the discs together on the end of the yarn placed between them. (2426)

## Knitting C3

HOW TO ENGINEER KNIT FABRICS FOR FOAM LAMINATION. R. G. Eddy (Eddy Inds., Inc.). Knitted Outerwear Times 30: 166-167 (Apr. 24, 1961).
The proper selection of fibers, yarns, spinning system, stitch structure, and finishing procedure in achieving optimum properties is stressed. (2427)

FIBERS, YARNS, AND MACHINERY FOR DOUBLE JERSEY CLOTH. J. H. Blore (Maldon Knitting Mills). Knitted Outerwear Times 30: 169-171 (Apr. 24, 1961). (2428)

MELTABLE FIBER BASIS OF SEPARATING THREAD PROCESS. E. K. Langille. Knitted Outerwear Times 30: 11, 13 (May 8, 1961).
Details of a newly patented process (USP 2 969 580, abstr. 1264/61) for separating a continuous series of knit articles are described. The new operation entails joining the parts together by a synthetic yarn, termed Fiber B, which disintegrates at a temperature of 250 degrees during the drying process. (2429)

DOUBLE JERSEY KNITTED FABRICS. R. C. Honour (W. J. Westaway Co. Ltd). Can. Textile J. 78: 56-58 (Apr. 28, 1961).
The types of double jersey fabrics and the production and finishing techniques used in their manufacture are briefly discussed. (2430)

DESIGN POSSIBILITIES IN CIRCULAR-KNIT JERSEY FABRICS. V. J. Lombardi (Scott & Williams, Inc.). Knitted Outerwear Times 30: 178B-178C (Apr. 24, 1961). (2431)

JERSEY PATTERN POTENTIALS ON SINKER TOP MACHINES. V. J. Lombardi (Scott & Williams, Inc.). Knitted Outerwear Times 30: 21-22 (May 1, 1961). (2432)

MANUFACTURE OF KNIT FABRICS FOR USE IN HEART SURGERY. T. Edman (Phila. Coll. Textiles & Science). Knitted Outerwear Times 30: 22-23 (May 1, 1961). (2433)

NEW END-USES FOR TRICOT AND RASCHEL KNITTED FABRICS. A. Reisfeld (Gehring Textiles). Knitted Outerwear Times 30: 25-29 (May 1, 1961).
The possibilities open to tricot fabrics in the areas of multi-bar products, laces, embroideries, staple fabrics, non-apparel fabrics, and staple goods and to raschel fabrics in the areas of laces and curtains, nets and meshes, carpeting, upholstery, outerwear, blankets, and filler fabrics are evaluated. (2434)

PATTERN NOTATIONS FOR WEFT KNITTED FABRIC--R. G. T. METHOD. A. Tremelloni (Tech. Inst. Knitting & Weaving, Novara). Knitted Outerwear Times 30: 97-103 (Apr. 24, 1961).
The basis of the R. G. T. system of notation is explained and its application is described and illustrated. The R. G. T. method is applied in two forms: (1) theoretical, with semi-circular and V symbols; and (2) industrial, with conventional signs of horizontal and vertical lines in order to indicate the "back loops" and "front loops" that constitute the fundamental elements of knitted fabrics. (2435)

ASPECTS OF SEAMLESS HOSIERY KNITTING DEVELOPMENTS. R. Peel (Singer-Fidelity, Inc.). Knitted Outerwear Times 30: 23-24 (May 1, 1961).
The advantages of a seamed toe versus a looped toe are cited, and the changes in hosiery production to be expected by the introduction of the former are discussed. (2436)

FOUR-FEED SEAMLESS HOSIERY MACHINE. Singer-Fidelity Inc. Am. Textile Reptr. 75: 35 (Apr. 27, 1961).
The new Singer-Fidelity four-feed operates completely without reciprocation, making a tubular stocking with boarded heel, which is reinforced together with the foot, and has a tailored toe. Features and cost figures are noted. (2437)

GORE MENDERS CAN BE CONTROLLED. P. E. Howard. Textile Inds. 125: 158-160 (May 1961).
Checklist for minimizing causes of gore menders in half-hose machinery. (2438)

MANUFACTURING KNIT DRESSES ON CIRCULAR, FLAT MACHINES. T. Edman (Phila. Coll. Textiles & Science). Knitted Outerwear Times 30: 178A-178B (Apr. 24, 1961). (2439)

PRODUCING MESH STRUCTURES ON AN INTERLOCK MACHINE. Knitted Outerwear Times 30: 178D (Apr. 24, 1961). (2440)

NEW FIBER YARN AND EQUIPMENT DEVELOPMENTS. C. Reichman. Knitted Outerwear Times 30: 5-11 (Apr. 24, 1961).
Developments in spun and textured yarns, knitting machinery, and dyeing and finishing equipment to be displayed at the Knitting Arts Exhibition are briefly surveyed. (2441)

TRENDS IN CIRCULAR KNITTED YARDGOODS MACHINERY. Knitted Outerwear Times 30: 17 (Apr. 24, 1961). (2442)

MORAT CIRCULAR KNITTING MACHINE MODELS. F. Morat GmbH. Knitted Outerwear Times 30: 19 (Apr. 24, 1961).
Features of the FK Seuma for jacquard yardgoods and the FKT Seuma for both jacquard yardgoods and garment lengths are described. (2443)

PHILIP MULTIPURPOSE SWEATER-STRIP MACHINE. Knitted Outerwear Times 30: 23, 103 (Apr. 24, 1961). (2444)

RECENT DEVELOPMENTS IN CIRCULAR SWEATER-STRIP UNITS. J. B. Lancashire (Leicester Coll. Technol.). Knitted Outerwear Times 30: 15 (Apr. 24, 1961).
Developments include: broader scope in limited purpose interlock machines for garment-length knitting; jacquard and loop transferring machine; and circular links types for bulky rib knits as well as jersey garment knitting. (2445)

CIRCULAR SWEATER-STRIP EQUIPMENT. C. Reichman. Knitted Outerwear Times 30: 3-9 (May 1, 1961).
Features of the following units are reviewed: Supreme BRW/3; Mayer's Suprint II; Fouquet SMJ-R; Fouquet SID-21; Lebocey MACBOR; Bentley 4/RNDTS; Morat FKT; and Wildman Jacquard LHDS. (2446)

JERSEY AND RIB JACQUARD YARDGOODS MACHINERY. C. Reichman. Knitted Outerwear Times 30: 43-51 (May 15, 1961).
Features of new sinker top, double jersey, and rib jacquard units on display at the Knitting Arts Exhibition are reviewed. (2447)

V-BED MACHINES SHOWN AT THE KNITTING ARTS EXHIBITION. Knitted Outerwear Times 30: 3, 5, 7 (May 8, 1961).
Highlights of the various V-bed machines on display at the exhibition are noted, and a detailed account of the Universal full-fashioned latch needle machine is included. (2448)

STOP NEEDLE SMASHES ON F-F. R. D. Brackett. Textile Inds. 125: 157, 160 (May 1961).
Safety devices for preventing smashes due to improperly locked picot bars, end friction slippage, and catch bar jumping are described. (2449)

NEW DEVELOPMENTS IN TRICOT AND RASCHEL MACHINERY. A. Reisfeld (Gehring Textiles, Inc.). Knitted Outerwear Times 30: 34, 109, 113, 117, 123, 127-151 (Apr. 24, 1961). (2450)

DEVELOPMENTS IN V-BED FLAT LATCH NEEDLE MACHINES. R. Innes. Knitted Outerwear Times 30: 25-27, 31-33 (Apr. 24, 1961).
Developments in this field can be summarized under three headings: (1) steady increase in the pattern potentialities; (2) greater automation either by electrical or mechanical means, or a combination of the two; and (3) increase in end-use versatility. Features of new units are described. (2451)

QUALITY CONTROL TECHNIQUES IN YARNS AND KNITTING. T. A. Podbereski. Knitted Outerwear Times 30: 17-19 (May 1, 1961).
Procedures for yarn testing, knitting and knitting machine control, and fabric inspection are outlined. (2452)

## Fabrics C4

OPTIMUM DISCOUNT RATE FOR CLOTH OF SUB-STANDARD WIDTH. PART 2. J. Lindberg and M. Sandelius (Swedish Inst. Textile Research). J. Textile Inst. 52: T109-T121 (Mar. 1961).
The paper presents an alternative method of calculating the discount rates for cloth of sub-standard width, when more than one lay-marker is used. Formulas and diagrams for ensuring the optimum lay-marker width are given. (2453)

LAYING OUT THE WARPING AND SLASHING FOR OUR WARP STRIPE CHAMBRAY FABRIC. E. B. Berry. Textile Bull. 87: 72-77 (May 1961).
The warping and slashing layout for the striped chambray discussed in abstr. 2005/61 is described. (2454)

DESIGN IN WOVEN STRUCTURE: COLOR CHECKS COMBINING TWO OR MORE ORDERS OF COLORING. D. C. Snowden. Wool Rev. 34: 15-16 (Apr. 1961). (2455)

RATIONAL USE OF CHEMICAL FIBERS IN WOOL FABRICS. L. G. Leites. Tekstil. Prom. 20, No. 5: 11-16 (1960). In Russian. Through BCIRA 41: 1072 (1961).
The properties of wool/viscose, wool/acetate rayon, wool/Kapron, wool/polyamide, wool/Lavsan, and wool/Nitron fiber fabrics are discussed. (2456)

PRODUCTION OF FABRICS FROM COTTON/VISCOSE FIBER BLENDS. Z. I. Labuzova and L. G. Ivanova. Tekstil. Prom. 20, No. 7: 29-32 (1960). In Russian. Through BCIRA 41: 1278 (1961).
Experiments showed that the dry strength of fabrics from unsized twisted yarn decreases with increasing content of viscose fibers in the blend. In the case of sized yarn, the tensile strength increases with increasing size quantity. Winding, warping, sizing, and weaving of the blended yarn, and their effect on the physico-chemical properties are discussed. (2457)

PHOTOELECTRIC PATTERN DEVICE FOR TUFTING MACHINES. Cobble Bros. Machy. Co. Textile Recorder 78: 79, 83 (May 1961). Textile Weekly 61 (1): 975-976 (Apr. 28, 1961).
Features and operation of the Cobble single end control scroll-type pattern attachment and illuminated scanning system for developing new patterns are described. (2458)

THERMAL UNDERWEAR STORY: AN HISTORICAL SURVEY. G. A. Urlaub. Knitted Outerwear Times 30: 29-33 (May 1, 1961). (2459)

DESIGN OF SUITABLE CLOTHING ON THE BASIS OF THE REQUIRED HEAT-INSULATING PROPERTIES. PART 2. PRACTICAL PROCEDURE DURING DESIGNING. M. Jokl. Textil 16, No. 1: 21-24 (1961). In Czech. Through BCIRA 41: 1073 (1961). For Part 1 see 2007/61. (2460)

GIRLOON ALL-NYLON GERMAN CARPET. Man-Made Textiles 38: 55 (Apr. 1961).
Girloon, a double woven velour carpeting with a 100% Perlon pile, has an extremely close pile, only half the height of a comparable wool carpet, and yet is claimed to be twice as durable. Its properties and advantages are described. (2461)

BRIGHT MARKETS FOR POLYURETHANE TEXTILES. P. W. Sherwood. Can. Textile J. 78: 60-61 (Apr. 28, 1961).
The properties and applications of polyurethanes in the form of foams and elastic covered yarns (Vyrene) are described. (2462)

FABRIC-FOAM LAMINATES. J. R. Cunningham (Scott Paper Co.). Modern Textiles Mag. 42: 24-25 (May 1961).
Factors to be considered in the vital areas of fabric selection, mechanical handling of foam and fabric, and the method of lamination in achieving optimum quality are discussed. The following standards for testing the final acceptability of the products are suggested and described: dry bond strength; wet bond strength in laundering and drycleaning; dimensional stability. (2463)

FOAM BACKING: NEW APPROACH TO FABRIC CONSTRUCTION. A. F. Docking (Calico Printers' Assoc. Ltd). Textile Recorder 78: 60-61 (May 1961).
The construction and properties of fabric-foam laminates are briefly discussed. (2464)

FOAM. Man-Made Textiles 38: 33-36 (Apr. 1961).
The status of the laminated textile foam industry in Great Britain is discussed with comments on adhesive vs flame laminating, polyether vs polyester foams, and the better competitive position of the U.S. industry. (2465)

FILTER MAN'S FILTER. B. C. Wendle. Du Pont Mag. 55: 11-13 (May/June 1961).
The advantages of Dacron nonwoven felts for various wet and dry filter applications are cited. (2466)

BONDED FIBERS. Chem. & Ind. No. 16: 487-492 (Apr. 22, 1961).
The following papers presented at a symposium organized by the Paper & Textile Chems. Group of Soc. Chem. Ind., Soc. Dyers & Colourists, and the Textile Inst. are summarized: Nonwoven or bonded fabrics, by G. H. Elliott and J. H. Fairclough; Plasticizing and bonding agents for textiles, by A. Hill; Use of glass fibers in reinforced plastics, by G. T. Mayson; Bonding in paper sheets, by D. H. Page; Needle loom felting, by J. H. Hunter; Production machinery for nonwoven fabrics, by T. Clegg. (2467)

STATUS OF NONWOVEN FABRICS IN THE TEXTILE TRADE. H. E. Shearer (Am. Viscose Corp.). Am. Dyestuff Reptr. 50: P292-P298 (Apr. 17, 1961).
The present position of the nonwoven fabric industry and the developments that have taken place in the last few years in web forming and bonding equipment, bonding technology, and fiber use are summarized. (2468)

UNSATURATED POLYESTERS: SOME ASPECTS OF THEIR CHEMISTRY. M. G. Harris. Fibres and Plastics 22: 107-111 (Apr. 1961).
The chemistry of the polyester resins is described and related to their use in the manufacture of laminates. (2469)

PRODUCTION OF NONWOVEN MATERIALS. S. P. Butukin. Tekstil. Prom. 20, No. 6: 9-13 (1960). In Russian. Through BCIRA 41: 1069 (1961).
Methods and techniques (including machinery) used in various Soviet Institutes and plants for the production of nonwoven fabrics are reviewed. (2470)

ORIGIN OF TENSION THREADS IN WOOLEN FABRICS. W. Even and H. Jung. Textil-Praxis (English ed.) No. 1: 34-36 (Mar. 1961).
In the case of the fabric examined, the tension threads were due to stretching of moist yarns during rewinding from cops onto cheeses. The importance of moisture control during yarn processing is stressed. 4 refs. (2471)

HOW CAN PILLING OF COTTON/POLYESTER BLENDED FABRICS BE PREVENTED? F. Bürkle. Textil-Praxis 16, No. 1: 39-40 (1960). In German. Through BCIRA 41: 1150 (1961).
Pilling in fabrics from cotton/polyester yarn blends can be greatly reduced by a correct composition of the two blend components. Essential also is the correct yarn and fabric construction. In most cases, singeing cannot be omitted. (2472)

BACKING, COATING, AND BONDING WITH RUBBER LATEX. P. G. Cook (Gen. Latex & Chem. Corp.). Can. Textile J. 78: 53-57 (Apr. 14, 1961).
The importance of selecting the right polymer and compounding it properly for a particular end use is stressed in this discussion of coating formulations and their application. (2473)

MAKING FIBER ARTERIES IN CZECHOSLOVAKIA. Skinner's Silk & Rayon Record 35: 338, 340 (Apr. 1961).
Trials with nylon and Terylene for arterial grafts have shown the latter to be preferable. The advantages of knitted arteries over woven ones are cited, and the manufacturing process developed is described. (2474)

1961 ANNUAL REVIEW OF TUFTED TEXTILES. Textile Inds. 125: 69-98 (May 1961).
Loomweve Corp. sells on style and quality, p. 70-72A; March of the tufteds, p. 72B-73; Plan for tufting success, by J. Fesperman, p. 75, 90, 94-98; British tufts, by P. Abbenheim, p. 78-83; Plant-compounded latex costs less, p. 87, 92-94. (2475)

TUFTED FABRICS. M. M. Beasley (Singer-Cobble Inc.). Modern Textiles Mag. 42: 45-49 (May 1961).
The growth of the tufted fabric industry over the past 20 years and its future potential are discussed. (2476)

## FINISHING D

SCOURING AND DYEING OF BLENDS FOR CARPETS. R. C. Cheetham (Courtaulds Ltd). Dyer 125: 581 (Apr. 21, 1961).
Techniques for scouring and dyeing Fibro, Fibrolane, Courtelle, and nylon, either blended with each other or with wool, are suggested, and the limitations set by certain of these fibers are indicated. (2477)

## Chemical processes D1

CHEMICAL TREATING: KEY TO FUTURE MARKET GROWTH OF COTTON. P. W. Sherwood. Can. Textile J. 78: 67-68 (Apr. 14, 1961).
An examination of the improved competitive position of cotton as related to new chemical finishing methods to improve luster, warmth, soiling resistance, wash-and-wear properties, water repellency, flame resistance, tensile strength, and resistance to ultraviolet light, rotting, and weathering. (2478)

TENDERING OF POLYAMIDE FIBERS IN PERBORATE SOLUTIONS. A. Engeler and W. Schefer. Textil-Rundschau 16, No. 1: 4-10 (1961). In German. Through BCIRA 41: 1345 (1961).
When washing polyamide fiber fabrics with perborate-containing detergents at boiling temperature, rapid tendering of the fiber takes place, especially in the case of polyamide-6. Soap has an inhibiting effect and detergents based on soap cause the least oxidative tendering. Perborate-tendering which, as regards the shape of the stress-elongation curve, is similar to light tendering, is characterized in that the number of amino end-groups remains almost unchanged while that of carboxyl end-groups increases. (2479)

USE OF OPTICAL BLEACHING AGENTS. I. Rusnak, A. Sekei, and E. Farkash. Tekstil. Prom. 20, No. 4: 84-86 (1960). In Russian. Through BCIRA 41: 1085 (1961).
The stability of optically bleached cotton fabric (four different products were tested) to light, weather, washing, alkalis and acids, perspiration, fresh water and seawater, formaldehyde, thermal treatment, drycleaning, hypochlorite, hydrogen peroxide, and ironing is listed in a table. (2480)

MEASURING TECHNIQUE FOR FLUORESCENT SUBSTANCES. PART 1. A. Kling and J. Kurz (Forschungsinstitut). Melliand 42, No. 2: 126-130 (1961).
The possibilities of measuring spectrophotometrically the concentration of optical brightness in solution and on the substrate are reviewed, with reference to the devices used. An additional device developed by the authors for a commercially available apparatus makes it possible to determine the emission spectra of applied optical bleaching agents in dependence of the wavelength. The device and results will be described in Part 2. (2481)

PROBLEMS INVOLVED IN THE CARBONIZATION OF PIECE GOODS. H. Vonberg. Textil-Praxis (English ed.) No. 1: 43-44 (Mar. 1961).
The following are discussed: rope vs full-width acid bath; at which stage to carbonize; hydroextraction; causes of stains; neutralization. (2482)

URETHANE COATINGS: THEIR CHEMISTRY AND COMPOSITION. G. C. Toone (Allied Chem. Corp.). Dyestuffs 44: 7-20 (Mar. 1961).
In this review, the basic diisocyanate reactions and polymerization routes in urethane coating technology are surveyed. Several commercial coating systems, based on this technology, are described. 12 refs. (2483)

EMBOSSED FABRIC FINISHES. R. A. Peel. Dyer 125: 511-514 (Apr. 7, 1961).
The techniques of pre-creping and after-embossing and the effects obtainable are described. (2484)

SINGLE-BATH METHOD OF BLEACHING COTTON FABRICS WITH HIGHLY STABLE SOLUTIONS OF HYDROGEN PEROXIDE IN KIER BOILERS. N. E. Fedorova and P. V. Moryganov. Tekhnol. Tekstil. Prom. No. 4 (17): 129-136 (1960). In Russian. Through BCIRA 41: 1290 (1961).
It was found that bleaching of cotton fabrics with highly stable hydrogen peroxide solution can be carried out simultaneously with the kier-boiling process, at a minimum hydrogen peroxide consumption and without noticeable corrosion phenomena. The temperature can be increased to 110-115° C without adverse effect on the strength of the cellulosic material. As compared with the present hydrogen peroxide bleaching method, especially for heavy fabrics, the new method has considerable economical advantages (reduced hydrogen peroxide consumption, shorter processing time, increased productivity of the equipment). (2485)

INTERACTION OF COATING MATERIAL AND BASE FABRIC STRUCTURES. F. K. Burr (Fabric Research Labs.). Can. Textile J. 78: 58, 61-63 (Apr. 14, 1961).
The paper discusses factors influencing pile binding, yarn shifting, hand, and durability. Since disposition of coating material in fabric structure is of importance, methods to control this are covered, as well as the modification of coating materials to yield improvements. 4 refs. (2486)

X-RAY DIFFRACTION STUDIES OF NONIONIC DETERGENTS. M. Rösch (Chemische Fabrik Stockhausen & Cie). Melliand 42, No. 2: 112-118 (1961).
The side spacings between the molecular chains of nonionic detergents based on polyethylene glycol ethers as determined by x-ray diffraction techniques are reported, and the significance of these data is discussed. 8 refs. (2487)

MODERN DETERGENTS AND SPINNING LUBRICANTS. W. S. Buck (Ind. Dyestuffs Ltd). J. Textile Inst. 52: P119-P129 (Mar. 1961).
The main characteristics and merits of the various chemical types of detergents and lubricants used in wool processing are reviewed. (2488)

INFLUENCE OF POLAR GROUPS ON THE HYDROPHILE-LIPOPHILE BALANCE OF NONIONIC COMPOUNDS. N. Schönfeldt and U. Almroth (Berol AB). J. Soc. Dyers Colourists 77: 155-158 (Apr. 1961).
Compounds containing an oleyl radical and the same number of ethylene oxide units but different polar groups differ in their solubility in water and in their hydrophile-lipophile balance. A comparison was made by determining the cloud points in 10% sodium chloride solution and in dioxan-water, as well as by means of the water numbers. The solubilizing power of a carboxyl group appears to be equal to that of a hydroxyl group and to that of three ethylene oxide groups. The hydrophilic character of an amine group is greater and is approximately equal to that of four ethylene oxide units. 5 refs. (2489)

SPECIAL TREATMENT OF VISCOSE RAYON. E. I. Martsinkonene and A. I. Vaidakavichyus. Tekstil. Prom. 20, No. 5: 16-17 (1960). In Russian. Through BCIRA 41: 1110 (1961).
Treatments of regenerated cellulose fabrics with urea-formaldehyde and melamine-formaldehyde precondensates (Carbamol and Metazin, respectively), to impart to the fabric crease resistance, shrink resistance, increased dry- and wet-strength, low swellability, stable relief-effects, luster, moiré effects, etc., are described. (2490)

COMPARISON OF QUATERNARIES AND AMPHOTERICS. D. L. Andersen (General Mills). Soap Chem. Specialties 37: 61-62, 99 (Apr. 1961).
The similarities and dissimilarities of quaternary ammonium compounds and amphoteric surface active agents are described and their applications are noted. (2491)

AUTOMATICS WASH SMALL LOADS CLEANER. R. P. Lovingood. J. Home Econ. 53: 385-387 (May 1961).
On the basis of this study of soil removal as a function of load size in three agitator-type automatic washing machines, it is concluded that washing is more effective with loads two to three pounds smaller than those recommended by the manufacturers of the machines used. (2492)

MAINTENANCE OF WOOL AND ACRYLIC BLANKETS. PART 1. THE EFFECTS OF LAUNDERING, by F. E. Petzel, B. Buckwalter, M. Hunter, and F. Vincent. PART 2. THE EFFECTS OF DRYCLEANING, by M. A. Morris and B. W. Mitchell. PART 3. COMPARISON OF LAUNDERING AND DRYCLEANING, by M. A. Morris and B. W. Mitchell. J. Home Econ. 53: 371-382 (May 1961).
The effects of laundering and drycleaning on the physical properties of 100% wool and acrylic fiber blankets were investigated and compared. The properties studied included yarn and weave structure, dimensional stability, count, weight, thickness, breaking strength, resistance to abrasion, and appearance. (2493)

PUSH-BUTTON DRYCLEANING. E. J. McVeigh. Dow Diamond 24: 16-19 (Spring 1961).
The development and efficiency of the new automatic coin-operated drycleaning units are briefly discussed. (2494)

AUTOMATIC COLOR CONTROL APPLIED TO HOSIERY PROCESSING. J. S. Christie (Proctor & Schwartz, Inc.). Am. Dyestuff Reptr. 50: P287-P291 (Apr. 17, 1961).
The sequence of developments leading to the production of the Electrocolorset process for finishing nylon hosiery in one continuous, automatic process is described, with particular emphasis on the color control mechanism. (2495)

TUBE-TEX TENSIONLESS OPEN WIDTH FINISHING MACHINE. Knitted Outerwear Times 30: 33 (Apr. 24, 1961).
The finisher combines the principle of the company's tensionless framer and steamer with a new method of slitting and opening circular knitted yardgoods. (2496)

FINISHING OF KNIT CLOTH FOR LAMINATING WITH FOAM. H. B. Goldstein (Sun Chem. Corp.). Knitted Outerwear Times 30: 167-169 (Apr. 24, 1961).
Typical formulations and techniques for imparting dimensional stability and water and stain resistance are reviewed. 8 refs. (2497)

IMPROVEMENT OF THE WEAR PROPERTIES OF FABRICS. P. S. Ugryumov. Tekstil. Prom. 20, No. 7: 45-48 (1960). In Russian. Through BCIRA 41: 1304 (1961).
Treatment of fabrics (cotton, linen, silk, wool) with ethyleneimine derivatives (mono-, di-, and triethyleneurea, etc.) and the effect on their behavior to water and soiling, washing, and drycleaning; on their resistance to shrinking and creasing; on their softness, fullness, dyeability, etc., are discussed. (2498)

PROPERTIES OF COTTON FABRICS TREATED WITH FLUOROCARBON COMBINATIONS WITH WATER REPELLENTS. H. B. Goldstein (Sun Chem. Corp.). Textile Research J. 31: 377-387 (Apr. 1961).
This paper shows some of the effects which can be obtained on cotton through the combined use of a fluorochemical textile finish and conventional water-repellent products. The types of water repellents included in this study are quaternaries, stearamide-resin dispersions, silicones, aluminum salt-wax emulsions, zirconium salt-wax emulsions, and a cationic thermosetting compound. The effects studied, and for which data are presented, include dynamic absorbency, spray ratings, soil resistance, whiteness, and mildew resistance. The properties obtained are also evaluated for their resistance toward laundering, drycleaning, weathering, and abrasion. 20 refs. (2499)

ORGANO-TIN COMPOUNDS AS TEXTILE ASSISTANTS. H. Anders. Textil-Praxis 16, No. 1: 50-51 (1961). In German. Through BCIRA 41: 1117 (1961).
Experiments have shown that diethyloctyl- and diethyllauryl-tin acetates are suitable rotproofing agents (as well as mothproofing agents) for wool, cotton, and jute, and are in this respect equivalent to the highly-active copper naphthenate. (2500)

METHOD OF PREPARATION AND SCOURING OF BACK GRAYS FOR CALICO PRINTING. S. A. Plaksin and L. A. Gotovtseva. Tekstil. Prom. 20, No. 4: 47-51 (1960). In Russian. Through BCIRA 41: 1083 (1961). (2501)

KEY CONTROLS IN SHRINKING WOOL. Fibres and Plastics 22: 97-98 (Apr. 1961).
The basic methods of shrinkproofing wool by chlorination are summarized, and the importance of the rate of chlorination and pH control are discussed. (2502)

USE OF CHROMOLAN FOR WATERPROOFING COTTON. N. D. Mal'tsev and O. I. Aganova. Tekstil. Prom. 20, No. 5: 18-20 (1960). In Russian. Through BCIRA 41: 1116 (1961).
Chromolan is a complex salt of chromic chloride and stearic acid (green liquid with an odor of isopropyl alcohol). It contains 4.4-5% chromium and not more than 0.05% iron; a 3% aqueous solution, to which 13% hexamethylenetetramine had been added (by weight of Chromolan), has a pH-value of not lower than 4. On dilution with water (1:2 or even 1.5), non-inflammable solutions are obtained. Introduction of acetic acid, although slightly lowering the pH, stabilizes the solutions. The high water-repellency of desized, Chromolan-treated fabrics (concentration 42 g/l) indicates that the complex salt forms a chemical compound with the cellulose by blocking its hydroxyl groups. (2503)

RESPONSE OF COTTONS TO CHEMICAL TREATMENTS. PART 3. YARN RESIN FINISHING. L. Rebenfeld (Textile Research Inst.). Textile Research J. 31: 311-316 (Apr. 1961).
Yarns from 6 widely different cottons were subjected to a resin finishing treatment. The mechanical properties of single fibers withdrawn from untreated and treated yarns were examined. The changes in resilience and rupture properties resulting from the treatment were studied in order to determine whether the different cottons responded differently to the resin treatment. It was observed that many changes in the mechanical properties were not constant for the 6 cottons. Changes in resilience properties could be related to the cottons' fibrillar orientation as measured by x-ray angle. 15 refs. (2504)

CROSS-LINKING REACTIONS IN CELLULOSIC FIBERS. PART 1. ORGANIC CHEMISTRY, HETEROGENEITY, AND ACCESSIBILITY PHENOMENA. D. D. Gagliardi and F. B. Shippee (Gagliardi Research Corp.). Textile Research J. 31: 316-327 (Apr. 1961).
It is pointed out that while the cross-linking theory of creaseproofing and shrinkproofing by resin treatment is based on sound physicochemical principles, the postulation of resin formation as the explanation for the effects produced must rely on such mechanical models as pore filling, cementing of growth rings, coating of crystallites, entanglement of cellulose molecules, hydrogen bonding of resin groups to cellulose hydroxyls, and coating of the specific surface of the fibers. New experimental data to substantiate the cross-linking mechanism and to better define the role of resin formation when it occurs in selected treatments is presented. 8 refs. (2505)

ROLE OF SPIRAL STRUCTURE IN UNTREATED AND TREATED COTTONS. R. S. Orr, A. W. Burgis, L. B. DeLuca, and J. N. Grant (So. Reg. Research Lab.). Textile Research J. 31: 302-310 (Apr. 1961).
In the present paper experimental evidence is presented to show that the spiral structure tends to untwist with loading and with increasing moisture. The importance of this feature to the strength, elongation, and elastic recovery of the fiber is discussed. Changes in the spiral structure upon mercerization, acetylation, and resin treatment are related to strength and elongation changes. 28 refs. (2506)

STUDIES ON THE CROSS-LINKING OF COTTON CELLULOSE. PART 2. MICROSCOPICAL OBSERVATIONS. V. W. Tripp, A. T. Moore, and M. L. Rollins (So. Reg. Research Lab.). Textile Research J. 31: 295-301 (Apr. 1961).
Electron microscope observations of the effects of cross-linking dry and swollen cellulose on extensibility, swelling capacity, and solubility of the fibers are presented and discussed. 11 refs. (2507)

PRODUCTION OF CHINTZ EFFECTS. E. Knup (Ciba Ltd). Ciba Rev. No. 1: 30-32 (1961).
A procedure for the fixation of a mechanically produced chintz effect based on the reduced swelling ability of cotton fibers caused by chemicals is described in detail. (2508)

CROSS-LINKING: HOW IT DETERMINES FIBER PROPERTIES. PART 1. A. J. Hall. Fibres and Plastics 22: 100-104 (Apr. 1961).
The mechanism of cross-linking and its applications (e.g. to cotton and rayon for imparting wash-and-wear properties, to wool for increased resistance to alkalis, to PVA to make it water insoluble, to nylon for increased elasticity), are discussed. The chemistry and use of the following specific cross-linking agents are described: dimethylol ethylene urea; triazones; APO (tris(1-aziridinyl) phosphine oxide; acetals; dimethylol butane dioldiurethane; CBA (1:1-carbonylbisaziridine); dimethyl dimethylol hydantoin; and the epoxides. 7 refs. (2509)

GLIKAZIN. T. N. Arkhipova, A. S. Kryukova, and V. G. Babkina. Tekstil. Prom. 20, No. 4: 54-55 (1960). In Russian. Through BCIRA 41: 1107 (1961).
Glikazin is a water-soluble melamine-formaldehyde precondensate, which is stable during storage, can be used with various catalysts and salts of strong inorganic acids, and is applied as a permanent finish to cotton and manmade fiber fabrics. It increases the fastness of fabrics dyed with sulfur, vat, pigment, and other dyes to wet and dry rubbing, washing, wet processing, etc. A suitable composition is given and the method of application is briefly outlined. (2510)

CHEMICAL MODIFICATION OF COTTON WITH DERIVATIVES OF DIVINYL SULFONE. G. C. Tesoro, P. Linden, and S. B. Sello (J. P. Stevens & Co.). Textile Research J. 31: 283-295 (Apr. 1961).
The work reported in this paper presents effective methods of overcoming the undesirable properties associated with the use of divinyl sulfone as a cross-linking agent for cellulosic fabrics, while yielding with greater efficiency treated products of comparable performance. This is accomplished by using as reagents certain water soluble, nonvolatile derivatives of divinyl sulfone which are relatively nontoxic and completely free of lachrymatory and vesicant properties. 5 refs. (2511)

NEW CATALYST FOR THE TREATMENT OF FABRIC WITH CARBAMOL (UREA FORMALDEHYDE PRECONDENSATE). K. I. Frolova and N. A. Shubina. Tekstil. Prom. 20, No. 5: 65-66 (1960). In Russian. Through BCIRA 41: 1108 (1961).
The disadvantages associated with the use of catalysts, such as organic acids or ammonium chloride, can be overcome by using as catalyst hydrogen peroxide in the form of 3% Perhydrol. The hydrogen peroxide in the Carbamol solution combines with the free formaldehyde and, during drying, oxidizes it gradually with formation of formic acid. The liberated acid reduces the pH of the solution and produces conditions favoring uniform polymerization of the resin during curing, the temperature of which may be reduced by 10-15°. (2512)

INVESTIGATION OF THE CATALYST IN THE CELLULOSE-DMEU REACTION. PART 1. EFFECT OF CATALYST UPON THE PHYSICAL AND CHEMICAL PROPERTIES OF THE FINISHED COTTONS. H. M. Ziifle, R. J. Berni, and R. R. Benerito (So. Reg. Research Lab.). Textile Research J. 31: 349-365 (Apr. 1961).
The object of the present work was to investigate the cotton cellulose-DMEU creaseproofing reaction in the presence of various catalysts in an attempt to elucidate the reaction mechanism under acid catalysis and thus to determine reasons for the superiority of one catalyst over another as related to crease recovery properties and chlorine retention. 27 refs. (2513)

ORGANIC CATALYST FOR CREASE-RESIST FINISHES ON VISCOSE FABRICS. Z. Endrusyak and E. Bzhezinskii. Tekstil. Prom. 20, No. 6: 71-72 (1960). In Russian. Through BCIRA 41: 1109 (1961).
Complexes of boric acid with mannitol, sorbitol and glucose were examined as catalysts in creaseproofing viscose fiber fabrics with urea formaldehyde resins. The complex of boric acid and glucose (from potato syrup), prepared by mixing warm solutions of 1 mol. boric acid and 1 mol. glucose, was found to give best results. Optimum concentration for all catalysts was 20-25 g/l of the impregnating bath. (2514)

FORMALDEHYDE TREATMENT OF PARTIALLY SWOLLEN COTTON. L. H. Chance, R. M. Perkins, and W. A. Reeves (So. Reg. Research Lab.). Textile Research J. 31: 366-376 (Apr. 1961).
Two processes for producing wash-wear cotton fabrics by treatment with formaldehyde are described. One of these processes consists of reacting the fabric in a wet swollen condition in an aqueous solution of formaldehyde and hydrochloric acid; this fabric has good wet wrinkle recovery only. The other process consists of reacting the fabric in a wet, partially swollen condition in a solution of acetic acid, water, hydrochloric acid, and formaldehyde; this fabric has good dry (as well as wet) wrinkle recovery. Cross-linking with formaldehyde at various degrees of fiber swelling is discussed briefly from a theoretical standpoint. 11 refs. (2515)

SELF-SMOOTHING COTTON. J. T. Marsh. Textile Mfr. 87: 153-156 (Apr. 1961).
Reports in the literature on the effects of laundering on breaking strength, crease recovery, and chlorine retention in cotton finished with DMEU (dimethylol ethylene urea) are summarized. The importance of the following factors in finishing on achieving laundering resistance: (1) the non-alkalinity of the fabric; (2) the selection of catalyst; (3) time; (4) temperature; and (5) neutralization. Even with the best possible care, however, it is pointed out that even this finish can be adversely affected by laundering particularly under acid conditions. (2516)

CHANGES IN THE PHYSICAL PROPERTIES OF COTTON ON CROSS-LINKING. F. H. Steiger, S. Y. Wang, and M. D. Hurwitz (Rohm & Haas Co.). Textile Research J. 31: 327-339 (Apr. 1961).
Results of a study on the relationship of strength loss in creaseproofing to the nature and site of cross-linking are reported. The poor crease recovery-strength relationship exhibited by cotton reacted with formaldehyde by dry curing is shown to be primarily a function of the formal linkage and not of the degradative effects of acid. Cotton in the wet state can be cross-linked by means of hemiacetal linkages with glyoxal, and it is shown that the strength loss produced by cured dimethylolethyleneurea at a given level of crease recovery is comparable to that obtained from uncured glyoxal in the absence of degradative effects associated with the hot, acidic curing of thermosetting finishes. The ratio of wet to dry crease recovery suggests that the areas of cellulose and/or the hydroxyl groups which are involved when cotton is cross-linked in glyoxal solutions are the same as those involved in the dry curing. The thesis that different areas and/or hydroxyl groups are involved in the attainment of wet and dry crease recovery is further supported by experiments in which dry crease recovery was obtained on cotton independently of the high wet crease recovery which had been established first. 15 refs. (2517)

INTER- AND INTRAMOLECULAR BONDING IN THE REACTION OF WRINKLE RESISTANT FINISHES WITH CELLULOSIC FABRICS. S. J. O'Brien and W. J. van Loo, Jr. (Am. Cyanamid Co.). Textile Research J. 31: 340-348 (Apr. 1961).
This paper presents the results of a detailed investigation, similar to that made on the formaldehyde-cotton system (abstr. 2030/61), of the relationship between the improvement in the wrinkle recovery of various cellulosic materials obtained by the reaction of a variety of cross-linking agents. The study was made to determine how the theoretical considerations involving cross-linking and intramolecular bridges developed for the formaldehyde-cotton system apply to the various cross-linking agents and how these theoretical aspects are influenced by changes in the substrate and conditions of the reaction. 10 refs. (2518)

BRUSH SETTING WITH EPOXIDES. Fibres and Plastics 22: 105-106 (Apr. 1961).
By using epoxide resins for setting the bristles of a paint brush into the ferrule production rates can be speeded up and bristle costs reduced, since setting can be done at a reduced depth. (2519)

## Dyeing and printing D2

DYEING WOOL/CELLULOSIC AND WOOL/POLYESTER MATERIALS. M. Beaumont (Ind. Dyestuffs Ltd). Textile Mfr. 87: 157-158 (Apr. 1961).
Recent developments in single-bath techniques, the problems encountered, and the auxiliary products and dyes used are discussed. (2520)

PRESENT STATE OF DYEING WOLCRYLON IV MP. H. Stöckigt. Deut. Textiltech. 11, No. 1: 32-35 (1961). In German. Through BCIRA 41: 1299 (1961).
Possibilities and limitations of dyeing these new polyacrylonitrile fibers are pointed out. The experiments described include dyeing processes at temperatures up to 100° C as well as under high-temperature conditions. (2521)

DYEING OF CELLULOSIC FIBERS AND RELATED PROCESSES. S. R. Cockett and K. A. Hilton. Leonard Hill (Books) Ltd, London. 1961. 417 p. 50s [$7.00].
Contents: Introduction; Cellulose and cellulosic fibers; Preparation; Light, color, and constitution; Colorants for cellulosic fibers; Dyeing: theoretical considerations; Application of colorants: (1) directly and indirectly, substantive dyes, (2) solubility cycle dyes, (3) colorants formed in situ, (4) resin-bonded pigment systems; Dyeing machines; Finishing; Appendix: miscellaneous cellulosic fibers; Bibliography. (2522)

REACTON DYESTUFFS IN DYEING AND PRINTING. H. Schumacher (J. R. Geigy AG). Melliand 42, No. 2: 89-100 (1961).
The properties and methods for the application of Reacton dyestuffs, a new group of reactive dyestuffs for cellulosic fibers, in dyeing and printing are discussed. (2523)

RECENT DEVELOPMENTS IN THE DYEING OF VEREL MODACRYLIC FIBER. R. J. Fortune and V. G. Paul (Tenn. Eastman Co.). Am. Dyestuff Reptr. 50: P336-P339 (May 1, 1961).
Recent developments permit the application of disperse, neutral-premetalized, and basic or cationic dyes at 160° F. Dyeings at 160° F yield equivalent fastness properties to those made at 212° F. Using this new technique in rawstock dyeing, loose and fluffy dyed fiber is obtained. In the piece dyeing of tufted or woven floor coverings, distortion and directional lay of the pile is virtually eliminated. Verel fiber can be dyed equally well in packages, skeins, and fabrics by use of this new technique. (2524)

AFTERTREATMENT WITH TANNIN/TARTAR EMETIC OF POLYAMIDE FIBERS DYED WITH ACID DYES. Sandoz AG. Melliand 42, No. 2: 100 (1961).
The aftertreatment is recommended to increase the fastness of medium and dark shades obtained by the Lyogen-P process. (2525)

ACID SHOCK PROCESS FOR NYLON DYEING. R. E. Fletcher (Ciba Ltd). Dyer 125: 582-583 (Apr. 21, 1961). (2526)

VARIATION OF NYLON 6 DYEING IN RELATION TO DRY AND WET HEAT-SETTING OF FABRICS. T. Yasuda. J. Textile Cellulose Inds. Japan 17, No. 1: 55-59 (1961). In Japanese (English summary). Through BCIRA 41: 1297 (1961).
The rate of diffusion of dye and the amount absorbed are greater in wet (steam) heat-set fabric; a structural explanation is given. (2527)

GREATER FASTNESS DEMANDS ON KNITTED GOODS. F. Hartmann. Textil-Praxis (English ed.) No. 1: 37-40 (Mar. 1961).
Brief survey of present day demands with respect to fastness levels in dyed knitwear and methods for achieving them. (2528)

DYEING OF SYNTHETIC FIBERS. PART 10. INTERACTION OF KAPRON WITH ACID METAL-CONTAINING DYES. A. A. Kharkharov and E. E. Starikovich. Tekhnol. Tekstil. Prom. No. 4 (17): 117-124 (1960). In Russian. Through BCIRA 41: 1296 (1961).
When studying the reaction mechanism of metal-containing dyes with polyamide fibers it was observed that, in the case of some acid dyes, salt formation plays an important role, indicating the participation of coordination bonds. Fixing of these dyes on polyamide fibers depends only partly upon the terminal amino groups of the fiber; it is brought about mainly at the expense of hydrogen bonds and by Van der Waals forces. (2529)

FORMATION OF INSOLUBLE OXY-AZO DYES ON KAPRON. P. V. Moryganov and B. N. Mel'nikov. Tekstil. Prom. 20, No. 6: 40-42 (1960). In Russian. Through BCIRA 41: 1093 (1961).
The method of application and development of the dyes is described in detail, and a list of suitable combinations of Azotol and azoamine dyes is given. Good results were obtained by the following aftertreatments of the dyed fiber: washing with warm water (50° C); 0.1% soda; soap solution (1 g/l) for 10-15 min at 70-75° C. (2530)

SWELLING ACTION OF CARRIERS IN DYEING POLYETHYLENE TEREPHTHALATE FIBER. F. M. Rawicz, D. M. Cates, and H. A. Rutherford (N. C. State Coll.). Am. Dyestuff Reptr. 50: 320-323, 354 (May 1, 1961).
Observations that have been made on swelling of Dacron fiber as a factor in carrier dyeing are presented. The investigation was divided into the following phases: measurement of the swelling of polyethylene terephthalate filament when treated with different assistants at various concentrations; measurement of changes in physical properties (denier, tenacity, initial modulus, and elongation at break) that are brought about by the contraction of the filament; and determination of the effect of certain swelling treatments on the rate of uptake of dye. 8 refs. (2531)

SELECTION OF DIRECT DYESTUFFS FOR APPLICATION TO UNDESULFURED RAYON STAPLE. AATCC Southeastern Section. Am. Dyestuff Reptr. 50: P299-P301 (Apr. 17, 1961).
To study the relative dyeing characteristics of desulfured and undesulfured rayon staple, comparative dyeings were made with 69 fast-to-light direct dyestuffs. These dyed samples were evaluated for shade differences, lightfastness, and washfastness. 43 of these direct dyestuffs gave equivalent shades on desulfured and undesulfured rayon staple; all but three gave identical lightfastness results on both rayons. The other 26 dyes produced significant undesirable shade changes on the undesulfured rayon staple. All were found to be metallic complexes. The sulfur compounds "in situ" on the undesulfured fibers do not affect the shade of the metallic complex dyestuffs. The sulfur and/or sulfur compounds must first become dispersed or dissolved in the dyebath before adversely changing the hue of the dye. (2532)

STRIPPING OF PROCION DYES FROM COTTON FOR INVESTIGATION OF FAULTS. T. P. Nevell (Shirley Inst.). J. Soc. Dyers Colourists 77: 158-160 (Apr. 1961).
Procion-dyed cotton that is insoluble in cuprammonium hydroxide may be rendered soluble by treating it in boiling 4% sodium carbonate solution, thus enabling its fluidity to be determined. By means of hot 40% aqueous hydrazine, all except one of 20 Procion dyes examined may be completely stripped from cotton without degrading it. Cloth stripped in this way is suitable for fluidity determinations and for redyeing for testing purposes. 5 refs. (2533)

DYEING OF VISCOSE RAYON CREPE FABRICS IN ROPE FORM WITH VAT DYES. E. R. Tsirkule and V. F. Androsov. Tekhnol. Tekstil. Prom. No. 4 (17): 125-128 (1960). In Russian. Through BCIRA 41: 1293 (1961).
The method and optimum dyeing conditions are described, and the economic advantages over dyeing with direct dyes are pointed out. Level and fast dyeings are obtained and microscopical examination of fiber sections shows uniform distribution of the dye over the whole fiber thickness. (2534)

USE OF AUXILIARIES IN DYEING. C. B. Stevens. Wool Record 99: 31-32 (Apr. 21, 1961).
The advantages of using auxiliaries such as Univadine W, Lyogen WD, Dispersol CWL, Irgasol SW, which slow down the rate of dyeing under any given dyebath conditions and, in effect, make the dyes less pH-sensitive and rather more acid-dyeing, in dyeing wool with acid and neutral premetalized dyes are discussed. (2535)

NEW CONCEPT IN WOOL DYEING: THE CIBAPHASOL TECHNIQUE. R. Casty (Ciba Ltd). Ciba Rev. No. 1: 25-30 (1961).
The purpose of this article is to describe how the phenomenon of coacervation can usefully be applied in textile finishing processes using Cibaphasol C to produce the desired aqueous two-phase system. (2536)

SETTING OF WOOL FIBERS IN DYEING. R. V. Peryman and R. F. Pickup (Wool Inds. Research Assoc.). J. Soc. Dyers Colourists 77: 149-154 (Apr. 1961).
In the work described, the setting effect of different dyeing processes was studied. Dyeing under neutral to slightly alkaline conditions and dyeing by afterchrome methods produce high degrees of permanent set, but supercontraction can occur after the use of strongly acid or acid chrome-mordant methods with sexivalent chromium. All dyeing processes give temporary set, but this can be much less with certain processes carried out at low temperature or under strongly acid conditions. The steaming of tufts of fibers, previously dyed (or chrome-dyed) by different methods under tension, produces marked differences in length and crimp. Twist is set more completely than extension and is less affected by subsequent steaming. 22 refs. (2537)

DETERMINATION OF THE ABSORPTION RATE OF VAT DYES. E. S. Nekrasova and S. G. Abramovich. Tekstil. Prom. 20, No. 7: 49-52 (1960). In Russian. Through BCIRA 41: 1292 (1961).
The absorption rate of vat dyes on cotton yarn (mercerized and unmercerized) from a standard bath was examined by determining the amount of dye absorbed colorimetrically. The dyeings were carried out in normal and nitrogen atmospheres. The absorption rate was considerably higher in a nitrogen atmosphere, especially in the case of indigoid and Indanthrene derivatives. Polycycloketone derivatives were absorbed more readily and more completely than indigoids. The introduction of bromine into the molecule of a golden-yellow vat dye increased the absorption from 53 to 82%. The absorption was considerably reduced in the presence of Solidegal or Oxamon (retarding agents). (2538)

TUFTING COLOR BARRIER BROKEN? S. M. Suchecki. Textile Inds. 125: 127, 129 (May 1961).
Details of the Deep Dye process (BP 830 927), adapted by the Bigelow Sanford Carpet Co. for its tufted carpets, are described. The process is essentially localized dyeing in which all colors of the design are applied simultaneously to the pile fabric. (2539)

ACRILAN-SPECTRAN: COLORFASTNESS TO WEATHER-OMETER EXPOSURE. Chemstrand Corp., Decatur, Ala. Apr. 1961. 2 p. Bull. No. AP-18 (suppl. no. 1). Free. (2540)

DIRECTIONS FOR PREVENTING SHADE CHANGES DURING THE DYEING AND DEVELOPING PROCESS. W. Zeiger. Deut. Textiltech. 11, No. 1: 36-42 (1961). In German. Through BCIRA 41: 1291 (1961).
Factors which may lead to undesirable shade changes during the dyeing and developing process are discussed, with special reference to unfavorable dye combinations and shade variations caused by chemical or physical changes in complex-forming, easily-reducible azo, vat, and sulfur dyes. (2541)

CIBACRON RANGE: SYNOPTIC TABLE OF DYEING AND PRINTING PROPERTIES. Ciba Ltd. Ciba Rev. No. 1: 36-37 (1961). (2542)

INFLUENCE OF THE NEWER FIBERS ON BEAM DYEING TECHNIQUES. P. J. Dolby (Imp. Chem. Inds. Ltd). Textile Mfr. 87: 146 (Apr. 1961).
See abstr. 620/60. (2543)

MULTICOLOR YARN DYEING. R. J. Scott. Textile Inds. 125: 130-131 (May 1961).
The production of multicolor and white effects on one single yarn by installing two inclined felt wicks at the extreme end of the reciprocating travel of each yarn as it enters a winding mechanism, for instance, in a split-drum-type of coner is described. Each of the two wicks per winding head is fed from a different solution, and thus produces two-colored effects. Instructions for converting any constant speed yarn winder for dyeing are given. (2544)

INSTRUMENT CONTROL IN A NOTTINGHAM DYE-HOUSE. J. B. Hodgson. Dyer 125: 585-587 (Apr. 21, 1961). Textile Weekly 61 (1): 837-838 (Apr. 14, 1961).
The use of the Numalec controller/coordinator for programming a complete dyeing cycle is explained. (2545)

PRINTING POLYESTER UNION FABRICS. H. Werdenberg (Ciba Ltd). Ciba Rev. No. 1: 32-35 (1961).
Recommended procedures for the pretreatment and printing of polyester/cellulose and polyester/wool fabrics are summarized. (2546)

DRYING IN SCREEN PRINTING. F. Lewisch. Melliand 42, No. 2: 104, 106 (1961).
Various drying systems are reviewed, and the advantages of heating the printing tables themselves according to an adjustable and controllable system are enumerated. (2547)

REMAZOL REACTIVE DYESTUFFS IN TWO-PHASE PRINTING. H. Zimmermann. Melliand 42, No. 2: 102, 104 (1961).
The suitability of the two-phase printing process for the application of Remazol dyes to cellulose fabrics is described. (2548)

HARDENABLE SCREEN LACQUER FOR PRELACQUERING AND AUXILIARY LACQUERS FOR SCREEN PRINTING. R. Künzl. Textil-Praxis (English ed.) No. 1: 45 (Mar. 1961).
Suitable lacquers are reviewed, and their application is briefly described. (2549)

PRINTING WITH DIRECT BLACK A (POLISH PRODUCT). F. Katsishak. Tekstil. Prom. 20, No. 6: 72-74 (1960). In Russian. Through BCIRA 41: 1104 (1961).
The dye is the sodium salt of diphenylamine sulfonilic acid; it can be applied to cotton, linen, and viscose rayon fabrics to give deep blacks with a grayish shade. The dye, available in the form of light-gray lustrous crystals or as powder, has good fastness properties, especially to high temperatures, does not require after-treatment with bichromate, and its color does not assume a greenish tint with time. The padded or printed fabric can be stored, after drying, for several hours before steaming. Black A contains 97-98% active ingredient, as compared with 60-78% in similar dyes produced elsewhere. (2550)

WHITE AND COLORED DISCHARGE PRINTS ON DYED COTTON FABRICS. V. E. Rostovtsev. Tekstil. Prom. 20, No. 6: 38-40 (1960). In Russian. Through BCIRA 41: 1105 (1961).
Cotton fabric dyed with direct Turquoise Blue (sulfonated copper phthalocyanine) can be discharge-printed to give white or colored effects. The printing paste contains 200 g of a 1:1 mixture of Rongalite and thickener (300 g in the case of white discharges on spun-rayon fabric), and Leucotrope (sulfonated dimethylbenzylammonium chloride) in alkaline medium. For colored discharge effects, the usual vat dyes may be used (of the polycycloketone type) without Leucotrope. (2551)

ENGLISH CHINTZ. P. Floud. Ciba Rev. No. 1: 2-24 (1961).
The British calico-printing industry, 1676-1840, p. 2-7; English contribution to the chemistry of calico printing before Perkin, p. 8-14; Development of design in English printed textiles, p. 15-20; Influence of William Morris, p. 21-23. 28 refs. (2552)

## Mechanical processes D3

ELECTROSTATIC FLOCKING. Man-Made Textiles 38: 49-51 (Apr. 1961).
Flock printing using fibers as long as 10 and 12 mm is now made possible due to the work of Eloflock Oberflächenveredlung GmbH, who produce the flocking machine and Vereinigte Glanzstoffabriken AG, who produce the flock. Perlon flock and Viscaflock (viscose) fiber is delivered either white or dyed, cut to the required length, and provided with a special finish which makes it conductive and prevents the adhesion of fibers to each other. The arrangement and operation of the Eloflock flocking line is described, and the types of fabrics which can be produced (e.g. carpets, pile fabrics for toys, imitation velvet, fleece for slippers) are described. (2553)

CONTROL OF CARPET SHEARING MACHINES. G. Boigs. Melliand 42, No. 2: 130-136 (1961).
The hydraulic control system used in the TS carpet shearing machine (Johannes Menscher Textilmaschinenfabrik) is described. (2554)

## TESTING AND MEASUREMENT E

NOMOGRAM IN TWISTING, WEAVING, AND FINISHING. M. Kienbaum. Textil-Praxis 16, No. 1: 42-47 (1961). In German. Through BCIRA 41: 1125 (1961).
Examples are given for plotting and use of the nomograms. (2555)

LUMINESCENCE ANALYSIS IN FILTERED ULTRAVIOLET LIGHT. H. Schröder. Textil-Praxis 16, No. 1: 12-16 (1961). In German. Through BCIRA 41: 1126 (1961).
The phenomenon of luminescence is described in detail and differences between electro- and chemo-luminescence, as well as phosphorescence and fluorescence, are explained. Luminescence analysis in ultraviolet light applied to the examination of textiles (raw materials, intermediate and finished products) has the advantage of being a non-destructive method, and it leads in the shortest possible time to sufficiently accurate results. (2556)

TEXTILE LABORATORY AND ITS MODERN EQUIPMENT. C. Duval. Industrie Textile: 775-779 (Nov. 1960); 29-34 (Jan. 1961). In French. Through BCIRA 41: 1320 (1961).
In this review, descriptions are given of the Texoriscope (for determining the maturity index of cottons, the orientation of the microstructure in artificial fibers, the fineness of wool and other textile fibers), the Lanameter, an electronic hygrometer, devices for measuring cotton fiber length, determining the fineness of wool, examining the cotton impurities and testing fiber fatigue, a miniature spinning plant, a yarn abrasion tester, a fatigue tester for fabrics, a porosimeter, a densimeter (with projector or microscope), a crease-resistance tester, and a pilling meter. (2557)

## Fibers E1

GRADIENT METHOD FOR THE DETERMINATION OF THE SPECIFIC GRAVITY OF CHEMICAL FIBERS. N. V. Mikhailov, N. N. Zavyalova, and V. O. Gorbacheva. Khim. Volok. No. 1: 19-22 (1960). In Russian. Through BCIRA 41: 1328 (1961).
The preparation of a density-gradient column, its calibration, and its use for the determination of the density of manmade fibers are described. (2558)

TO IDENTIFY SYNTHETIC FIBERS BY GENERIC CLASS. T. D. Miles and F. A. Hoffman (U. S. Quartermaster Research & Eng. Command). Modern Textiles Mag. 42: 27-28 (May 1961).
The method described has been devised for use as a fiber identification method for acceptance testing. It is limited to fabrics that are made of one type of fibers or blends and fabrics that can be separated before identification. The following generic types are included: acetate, triacetate, acrylic, fluorocarbon, glass, modacrylic, nylon, nytril, olefin, polyester, rayon, saran, vinal, and vinyon. 6 refs. (2559)

AUTOMATION IN THE FIELD OF COTTON FIBER TESTS. I. Ionescu-Muscel and others. Industria Textila 11, No. 12: 478-481 (1960). In Rumanian (English summary). Through BCIRA 41: 1129 (1961).
An electromechanical apparatus for length measurements, the Fibrograf Universal, is described and a schematic drawing is shown. Three curves are automatically plotted: the frequency curve according to length, the curve of cumulative frequencies, and the curve of cumulative lengths based on the number of fibers in the sorted groups. (2560)

ASSESSMENT OF WOOL QUALITY. E. M. Pohle. Materials Research & Standards 1: 168-172 (Mar. 1961).
Parameters for assessment of wool quality (fineness, length, strength, crimp, color) and their measurement are reviewed. 8 refs. (2561)

METHODS OF STUDYING THE QUANTITATIVE COMPOSITION OF COTTON/VISCOSE STAPLE FIBER BLENDS. G. A. Terent'ev and S. S. Frolov. Tekhnol. Tekstil. Prom. No. 4 (17): 86-92 (1960). In Russian. Through BCIRA 41: 1327 (1961).
Five methods are described for determining the composition of cotton/viscose staple fiber blends and the effectiveness of mixing: (1) by dissolution of the viscose fiber in 85% formic acid with addition of zinc chloride; (2) from the different solubility of the two fibers in sodium zincate solution; (3) by microscopical examination; (4) from the difference in the sorption of some direct dyes; (5) from the different iodine absorption by cotton and viscose fibers. The sorption method and the quantitative method of determining similar fibers under the microscope were found to be the most convenient. (2562)

APPLICABILITY OF THE OEHME DIELECTRIC CONSTANT METER FOR THE EXAMINATION OF UNDISSOLVED FIBROUS SUBSTANCES. R. Lamm. Deut. Textiltech. 11, No. 1: 43-45 (1961). In German. Through BCIRA 41: 1322 (1961).
It is shown that when using the Oehme dielectric constant meter for determining the dielectric constant of undissolved fibers, the values obtained are unaffected by the staple length of the fibers but increase below a certain volume proportion (0.1 of the total volume of the measuring cell). Since, even in non-voluminous fibers (cotton and viscose), the measuring cell must be completely filled, it is necessary to weigh out at least 2.5 g, corresponding to a volume proportion of 0.11. The method can also be used for determining the moisture content of hydrophilic fibers. (2563)

USE OF TRANSPARENT ADHESIVE TAPE IN THE PREPARATION OF MICROSECTIONS. D. S. Gowers and R. E. Miller (Rohm & Haas Co.). Nature 190: 424-425 (Apr. 29, 1961).
The preparation of microsections of textile fibers, using tape to hold the embedded sections throughout the cutting and mounting operations, is described. (2564)

SHORT-LENGTH SHRINKAGE TEST FOR ORLON. E. I. du Pont de Nemours & Co., Textile Fibers Dept., Wilmington, Del. Apr. 1961. 6 p. Bull. OR-112. Free.
The principle and design of the short-length fiber shrinkage tester are described. Detailed instructions for its use are presented. (2565)

PROBABILITY SAMPLING METHODS FOR WOOL. L. Tanner. Materials Research & Standards 1: 172-175 (Mar. 1961).
A brief résumé of experiences in the development of a practicable sampling procedure. 6 refs. (2566)

USEFULNESS OF THE ASTM TEST METHODS AND SPECIFICATIONS IN THE WOOLEN INDUSTRY. W. von Bergen. Melliand 42, No. 2: 74-82 (1961).
The ASTM methods for fineness and core sampling are used to illustrate the usefulness of standard methods in scientific assessment of wool quality. (2567)

## Yarns E2

IRREGULARITY EVALUATION OF TEXTILE MATERIALS FROM THE VARIATION AMPLITUDE. A. N. Solov'ev and L. A. Galkova. Tekhnol. Tekstil. Prom. No. 4 (17): 29-34 (1960). In Russian. Through BCIRA 41: 1334 (1961). (2568)

APPARATUS TO COUNT TRACER RADIOACTIVITY IN A RUNNING THREAD. F. J. Hybart, P. F. Clemo, D. Davey, and C. D. Gibson (Brit. Nylon Spinners Ltd). J. Textile Inst. 52: T122-T125 (Mar. 1961).
A description is given of a method for the continuous counting of radioactive emissions of low energy from a running threadline to which radioactive tracers have been added. The construction of the apparatus, the procedure for a measurement, and the calibration of the instrument are described. 4 refs. (2569)

YARN CROSS-SECTION CALCULATIONS SIMPLIFIED. A. J. Gagnon. Textile Inds. 125: 113-114 (May 1961).
The formulas given permit the use of a slide rule for determining yarn diameter and the number of fibers in a yarn cross-section. (2570)

SOME MORPHOLOGICAL CHARACTERISTICS OF TEXTURED YARNS. PART 1. PHOTOELECTRIC METHOD OF MEASURING YARN BULKINESS AND FIBER DISTRIBUTION IN YARN. K. Kawasaki. J. Soc. Textile Cellulose Inds. Japan 17, No. 1: 2-10 (1961). In Japanese (English summary). Through BCIRA 41: 1335 (1961).
Light is projected through a narrow slit that is moved laterally along the yarn and the intensity of the transmitted light is measured. The method and some results are described and discussed. (2571)

DETERMINATION OF THE DEGREE OF SETTING IN CRIMPED YARNS FROM POLYAMIDE 6 FIBERS AND THEIR PRODUCTS. K. Schwertassek and J. Vyskocilova. Textil 16, No. 1: 28-31 (1961). In Czech. Through BCIRA 41: 1145 (1961). (2572)

## Fabrics E3

PROBLEMS OF FABRIC ANALYSIS. TEXTILE FIBERS IN FABRIC ANALYSIS. DYES IN FABRIC ANALYSIS. J. Kiger. Industrie Textile: 781-798 (Nov. 1960); 901-916 (Dec. 1960); 61-69 (Jan. 1961). In French. Through BCIRA 41: 1339 (1961).
In continuation of previous articles (abstr. 1137/61), the author reviews the characteristics of the most important textile fibers and their blends, as well as methods for quantitative analysis of the constituents of textile materials; discusses the dyes used for dyeing and printing and for incorporation of insoluble pigments in the fiber mass during spinning, and describes standard procedures for evaluating the fastness properties of fabrics. Brief reference is also made to special analyses of animal and vegetable fibers (used in mattresses, padding material, etc.) and of trimmings (woven braids, galloons, etc.). (2573)

NEW RAPID PROCEDURES FOR THE CHEMICAL ANALYSIS OF IMITATION ASTRAKHAN ON A VISCOSE FIBER BASE. E. S. Khoroshaya, A. N. Lykova, R. A. Liberova, and N. L. Baulina. Nauch. Issledovatel. Trudy Tsentral. Nauch.-Issledovatel. Inst. Zamenitelei Kozhi, Sbornik 9: 173-177 (1958). In Russian. Through Chem. Abstr. 55: 6871 (1961). (2574)

PROCEDURES FOR ANALYZING RASCHEL FABRICS. PART 3. H. Rotenstein. Knitted Outerwear Times 30: 53-55 (May 15, 1961).
A step-by-step procedure for the analysis of raschel fabrics which can be utilized for the reproduction and cost calculation of a sample is outlined. (2575)

## Other E4

PAPER CHROMATOGRAPHY OF DISPERSE DYES. J. Gasparic and I. Taborska (Czech. Research Inst. Organic Syntheses). (Letter to the editor). J. Soc. Dyers Colourists 77: 160-161 (Apr. 1961).
Solvent systems suitable for the separation and identification of disperse dyes are noted. (2576)

ANALYSIS OF FILM-FORMING FINISHES IN TEXTILES. B. Norwick (Beaunit Mills). Am. Dyestuff Reptr. 50: P329-P335 (May 1, 1961).
The method is offered in the form of AATCC Test Method 94: Category 1 - (Film Formers). Adhesive, Abrasion Resisting, Binder, Coating, Size, Slipproof, Stiffener, Snag Resisting, Nonlinting. The system is based largely on infrared technique and selective solvent solubility is used to separate the various materials. (2577)

ANALYSIS OF FINISH IN TEXTILES. AATCC Comm. on Identification of Finishes on Textiles. Am. Dyestuff Reptr. 50: P325-P328 (May 1, 1961).
Tentative test method 94-1961T: identification of antibacterial and mildewproof finishes. 8 refs. (2578)

ACCELERATED DETERMINATION OF SOAP CONCENTRATION. N. P. Paramonov. Tekstil. Prom. 20, No. 5: 66-67 (1960). In Russian. Through BCIRA 41: 1082 (1961).
The method is described and examples are given for determining small concentrations of soap, e.g. in washing liquors. (2579)

NEW DYNAMIC METHOD OF DETERGENT FOAM MEASUREMENT. H. E. Reich, J. T. Patton, Jr., and C. V. Francis (Wyandotte Chem. Corp.). Soap Chem. Specialties 37: 55-57, 104 (Apr. 1961).
The design and use of an apparatus for measuring the foam of surfactants under dynamic conditions, that closely resemble those of actual use, are described. The device is particularly suitable for accentuating the differences among the foam properties of very low foaming surfactants. (2580)

TEXTILES: DETERMINATION OF THE SUBLIMATION FASTNESS OF DYEINGS AND PRINTS ON STORAGE. Swiss Standards Assoc. Textil-Rundschau 16, No. 1: 13 (1961). In German. Through BCIRA 41: 1340 (1961).
The Swiss specification SNV 95 835 defines the principles of the method, apparatus and reagents, preparation and testing of the sample and values to be included in the report, when determining the migration resistance of the dye on textiles stored for a prolonged period. The directions apply in particular to acetate, polyamide, and polyester fibers. (2581)

PERFORMANCE TESTING OF AUXILIARIES. S. R. Cockett. Dyer 125: 517-518 (Apr. 7, 1961).
The importance of sampling, test choice, test execution, and interpretation of test results in the laboratory assessment of performance in practice is pointed out. (2582)

ANALYSIS AND TESTING OF PLASTICS. G. C. Ives (Yarsley Testing Labs. Ltd). Fibres and Plastics 22: 112-115 (Apr. 1961).
Methods for the quantitative and qualitative determination of components and for the evaluation of mechanical, thermal, electrical, and miscellaneous physical properties are reviewed. New specifications are noted. See also abstr. 3652/60. 29 refs. (2583)

TEXTILES: DETERMINATION OF THE RESISTANCE OF DYEINGS AND PRINTS TO SPOT REMOVING AGENTS. Swiss Standards Assoc. Textil-Rundschau 16, No. 1: 12 (1961). In German. Through BCIRA 41: 1341 (1961).
The Swiss specification SNV 95 830 defines the method, apparatus and reagents, preparation and treatment of the sample, and the items to be included in the report, when testing the resistance of dyed textiles to the action of organic solvents (with rubbing), such as those used in drycleaning or as spot-removing agents in the household. (2584)

PAPER CHROMATOGRAPHY OF RESIN PRECONDENSATES AND HYDROLYZATES. K. Thurnher. Melliand Textilber. 41, No. 11: 1421-1426 (1960). In German. Through BCIRA 41: 465 (1961).
The principles of adsorption- and paper chromatography are briefly discussed, and the methods used for paper chromatography of resins (developing by dyeing with acid dyes with propanol as eluting agent, or by spraying with Tollens reagent) are described, with special reference to the paper chromatographic detection of resin precondensates and resin hydrolysates. (2585)

## MILL MANAGEMENT F

DO YOU HAVE WHAT IT TAKES TO BE A SUPERVISOR? PART 1. W. Westbrook. Textile Bull. 87: 65-66 (May 1961).
The skills and duties of the supervisor are outlined. (2586)

MODERN TEXTILE MANAGEMENT. PART 3. N. L. Enrick. Textile Inds. 125: 101-103 (May 1961).
The use of the Simplex method of linear programming for determining the optimum combination of fabric yardages is described. (2587)

EMPLOYEE DISCHARGE. PART 1. WHERE THE PLANT IS UNIONIZED. PART 2. WHERE PLANT IS NOT UNIONIZED. J. Soloff (Leon Henderson & Associates). Textile Inds. 125: 106-107 (May 1961). (2588)

## Industrial engineering F1

BIOLOGICAL OXYGEN DEMAND (BOD) OF STARCH AND STARCH DERIVATIVES. H. Benninga. Textil-Praxis (English ed.) No. 1: 40-43 (Mar. 1961).
This publication gives the results of an investigation of the biological oxygen demand of starch derivatives. It has examined in particular to what extent the etherification of starch has an influence on the BOD of waste water. It was found that a comparatively light etherification of, on an average, only one glucose group out of ten is sufficient to reduce the polluting action of starch to 1/3 of the value of an unetherified starch. 9 refs. (2589)

PROGRAM REGULATOR. G. S. Buberman. Tekstil. Prom. No. 6: 16-20 (1960). In German. Through BCIRA 41: 1084 (1961).
The regulator, whose construction is described and circuit diagram given, is designed for controlling the silk-steeping process, but can also be used in controlling other production processes. (2590)

REDUCING DIET FOR OVERHEAD. R. W. Malone. Textile Inds. 125: 123-125 (May 1961).
Basic criteria for developing standards to evaluate the performance of overhead costs are given. (2591)

FINDING THE BEST WAY TO TREAT WASTES FROM A BLANKET MILL. A. L. Smith, J. Layell, and J. C. Grey. Wastes Eng. 32: 230-233, 257 (May 1961).
Results of a four year pilot study at the Chatham Mfg. Co. plant to determine the most economical and feasible method of waste treatment demonstrated the effectiveness of the aeration technique. (2592)

WHAT THE SUPERINTENDENT EXPECTS OF QUALITY CONTROL. J. L. Delany (Joanna Cotton Mills Co.). Textile Inds. 125: 115-119 (May 1961).
See also abstr. 4549/60. (2593)

## Plant and equipment F2

ASPECTS CONCERNING THE CHOICE OF THE LOW TEMPERATURE SOURCE FOR CONDITIONING INSTALLATIONS. G. M. Keller. Chemiefasern 10, No. 12: 790-801 (1960). In German. Through BCIRA 41: 1153 (1961).
Conditioning with well water and its limitation, compression-refrigerating machines with piston- and turbo-compressors, and lithium bromide absorption refrigerators are described, and various other types of refrigerating machines are critically examined and compared. (2594)

HOW TO KEEP AIR CONDITIONING COSTS DOWN. S. D. George. Textile Inds. 125: 108-112, 201 (May 1961).
Practical preventive and corrective measures for troubles most frequently encountered with central station systems are covered. (2595)

UERKHEIM DE-ELECTRIFYING AND DUST COLLECTING EQUIPMENT SYSTEM. Melliand 42, No. 2: 118, 120 (1961).
In the Uerkheim system described, prior to the removal of dust and fly by suction, an almost complete elimination of static is achieved. Its advantages and applications are cited. (2596)

STATIC DRIVES FOR CONTROLLING DC MOTORS. F. T. Bailey (Westinghouse Elec. Corp.). Textile Bull. 87: 85-88 (May 1961).
The reactifier drive described is a static adjustable speed controller which has been completely packaged except for the dc motor and the operator's controls. The reactifier converts ac to dc power by means of silicon rectifiers and applies it to the armature of dc shunt motors. Its advantages and limitations are discussed. (2597)

THOUGHTS ON REEQUIPMENT. A. A. Hayes (Casablancas High Draft Co. Ltd). Textile Weekly 61 (1): 586-591 (Mar. 17, 1961); 662-667 (Mar. 24, 1961).
The modernization of existing machinery by the introduction of improved drafting systems, the requirements for these systems, and how the Casablancas GX2 system for ring spinning frames and 2-zone high draft and U-3 systems for speed frames fulfills these requirements are discussed. In addition, means for improving creeling efficiency, short processing systems, and the benefits of the Hunt warp letoff system are noted. (2598)

WHAT'S SO SPECIAL ABOUT NYLON POLYMER CORE BELTING? Textile Bull. 87: 68-70 (May 1961).
The advantages and use of nylon polymer core belting for textile drives are discussed. (2599)

ILLUMINATION--A DIFFICULT PROBLEM OF THE TEXTILE INDUSTRY. K. Mickan. Textil-Praxis 16, No. 1: 69-75 (1961). In German. Through BCIRA 41: 1152 (1961).
Examples are given of how to obtain optimum illumination in cardrooms, spinning rooms, weaving sheds, etc. (2600)

EFFECT OF COLOR ON LABOR TURNOVER, ZEST FOR WORK, AND PRODUCTIVITY. F. Baierl. Melliand 42, No. 2: 120-124 (1961).
The psychological, physiological, and physical importance of color engineering in industrial planning are discussed. (2601)

NEW TRENDS IN EAST GERMAN TEXTILE MACHINERY CONSTRUCTION. Deut. Textiltech. 10, No. 12: 609-624 (1960). In German. Through BCIRA 41: 978 (1961).
New developments in East-German spinning, warping and winding, weaving, knitting, and finishing machinery are described and illustrated. (2602)

EFFECTIVE MACHINERY MANAGEMENT. B. E. Sweet (Uster Corp.). Can. Textile J. 78: 49-53 (Apr. 28, 1961).
The detection of machine faults through the analysis of yarn variations by means of the Uster spectrograph is described and illustrated. (2603)

STROBOSCOPE: A VALUABLE QUALITY CONTROL TOOL. M. J. Fitzmorris. Textile Bull. 87: 78-80 (May 1961).
In general, the stroboscope can be used to observe any rotating or reciprocating motion in a textile machine. Frequent use of the stroboscope as a preventive maintenance tool or as a tachometer can keep production at a peak and can greatly reduce the number of seconds produced. A brief description of the stroboscope and the characteristics to be considered in its selection are included. (2604)

HIGH SPEED FILTRATION INSTALLATION. G. S. Gromadskii and M. G. Kachurin. Tekstil. Prom. 20, No. 4: 58-61 (1960). In Russian. Through BCIRA 41: 1155 (1961).
The installation described (developed especially for finishing plants) is claimed to reduce the number of various stains and defects in fabrics, and increase their whiteness and the quality of the finished fabric. (2605)

WATER ECONOMY IN THE TEXTILE INDUSTRY. W. Husmann. Textil-Praxis 16, No. 1: 59-66 (1961). In German. Through BCIRA 41: 1154 (1961).
Problems of water supply and effluent purification are reviewed. (2606)

## SCIENCES G

## Chemistry G1

CHEMICAL REACTIONS OF POLYMERS CONTAINING NITRILE GROUPS. M. Negishi. J. Soc. Textile Cellulose Inds. Japan 17, No. 1: 66-74 (1961). In Japanese. Through BCIRA 41: 1375 (1961).
This review has 88 references. (2607)

ORTHO- AND PARA-CORTEX PREPARATIONS FROM WOOL: CONTRIBUTION TO BILATERAL STRUCTURE. A. Schöberl. Melliand Textilber. 41: 188-191 (1960). In German. Through J. Textile Inst. 51: A220 (1960).
The separation of ortho- and para-cortical preparations from wool is described, and the results are tabulated of analyses of them for amino acids and for N-terminal groups by the Sanger method. Similar preparations have been isolated from wool treated with sodium in liquid ammonia. A description of the treatment of wool with hot dimethyl formamide is also included. (2608)

COMPARISON OF HYDROCELLULOSES MADE FROM UNMERCERIZED AND MERCERIZED COTTON CELLULOSE, WITH PARTICULAR REFERENCE TO THE DEGRADATIVE ACTION OF HOT ALKALIS UPON THEM. R. L. Colbran and G. F. Davidson (Shirley Inst.). J. Textile Inst. 52: T140-T152 (Mar. 1961).
The primary object of the present investigation was to compare hydrocelluloses derived from unmercerized and mercerized cotton with respect to their behavior towards hot alkalis. Hydrocelluloses made from unmercerized and mercerized cottons were treated at 100° C for 6 hrs with 0.25N solutions of the alkalis, and the losses of weight by the hydrocelluloses, and the copper numbers and carboxyl contents of the residues, were determined. Results obtained show that the relation between copper number and fluidity differ for the two types of hydrocellulose: for a given copper number, the hydrocellulose from mercerized cotton has a considerably higher fluidity than that from unmercerized cotton. 15 refs. (2609)

SOLVENT-BLOWN RIGID URETHANE FOAMS FROM CASTOR-BASED POLYOLS. C. K. Lyon, V. H. Garrett, and L. A. Goldblatt (Western Reg. Research Lab.). J. Am. Oil Chemists Soc. 38: 262-266 (May 1961).
The preparation of trichlorofluoromethane-blown rigid urethane foams using toluenediisocyanate and castor oil-derived polyols was investigated. The effect of catalyst, silicone surfactant, and trichlorofluoromethane content was also investigated. An empirical relationship between density and compressive strength in a given foam system was derived. 6 refs. (2610)

USE OF A TENSILE TESTING MACHINE FOR THE DETERMINATION OF STRESS AND STRAIN-OPTICAL COEFFICIENTS. D. A. Keedy, R. J. Volungis, and H. Kawai (Univ. Mass.). Rev. Sci. Instr. 32: 415-416 (Apr. 1961).
A device which can be used in conjunction with a tensile testing machine to determine the birefringence of a polymer sample as a function of stress, strain, and temperature is described. A chamber is provided so that the sample may be held at a controlled temperature during the measurement. (2611)

## Physics G2

FIBER MODIFICATION BY IRRADIATION AND POLYMER GRAFTING. A. J. Hall. Textile Recorder 78: 57-59, 67 (May 1961).
Recent progress in the modification of textile fibers by irradiation techniques with and without polymer grafting is discussed, and the possibilities of this approach, rapidly becoming commercially practicable, are indicated. Among the examples cited are: tone-in-tone dyeing of wool fabrics; increased modulus of elasticity in polyester fibers; improved dyeability in acrylic fibers; and antistatic, water repellent, mildew resistant, and wear resistant effects on various fibers. 9 refs. (2612)

EFFECT OF DRESSING AGENTS ON THE ELECTRICAL CONDUCTIVITY OF STAPLE FIBERS. K. S. Tugeev. Tekstil. Prom. 20, No. 6: 43-44 (1960). In Russian. Through BCIRA 41: 1021 (1961).
The experiments described were carried out in a special thermostat on two types of fibers and their blends in the form of slivers (with and without dressing), whose electrical resistance was measured at 18° C within a relative humidity range of 40-70%. The results showed that the static electricity decreases in blends. The method described can also be used for determining the effect of various finishing and sizing agents on the electrical conductivity of fibers. (2613)

EFFECT OF IONIZING RAYS ON FIBROUS KERATINS. D. Hildebrand and H. Wurz. Melliand Textilber. 41: 1229-1231 (1960). In German. Through J. Textile Inst. 51: A616 (1960).
Wool, mohair, and camel hair were irradiated with neutron rays and with gamma rays, and then tested for alkali-solubility and for change in amino-acid composition. Irradiation with neutrons leads to decomposition of cystine, tyrosine and tryptophan, in proportion to the dose of radiation, tryptophan being the most sensitive. Degradation of the amino acids by gamma rays is dependent on the presence of atmospheric oxygen, especially in the case of cystine. In the absence of air, moisture and heat, the cystine linkage is more stable than so far assumed. (2614)

INTRODUCTION OF NEW TECHNIQUES AND TECHNOLOGICAL PROCESSES. K. A. Baev and T. N. Ushakov. Tekstil. Prom. 20, No. 7: 86-88 (1960). In Russian. Z. ges.Textil-Ind. 62, No. 21: 946-947 (1960). In German. Through BCIRA 41: 1321 (1961).
The use of radioactive isotopes in the textile industry is discussed, and the activities of various inventors and research institutes are reported. (2615)

RADIOTAGGED SOILS. REMOVAL FROM SEVERAL SUBSTRATES AND ADSORPTION SITE CHARACTER. J. C. Harris and J. Sataner (Monsanto Chem. Co.). J. Am. Oil Chemists Soc. 38: 244-249 (May 1961).
A study on the mechanism of soil removal from various substrates is reported. Substrates investigated were glass, quartz, porcelain, steel, stainless steel, aluminum, polyethylene, methylmethacrylate, nylon, and Teflon. Radiotagged (C-14) soils used were algal protein, stearic acid, and tristearin. (2616)

## MISCELLANY H

TEXTILE CONSUMER LOOKS TO AATCC. E. Morrill (Corn Prods. Co.). Am. Dyestuff Reptr. 50: P209-P210, P224 (Mar. 20, 1961).
The role of the AATCC, its obligations to its members and to the textile industry, and the advisability of establishing a committee for consumers' interests are discussed. (2617)

TEXTILE ENG. CONFERENCE, AM. SOC. MECH. ENGRS., CLEMSON, SOUTH CAROLINA, MARCH 16-17, 1961. Textile Bull. 87: 48-51 (May 1961).
Highlights of papers dealing with nonwoven fabrics and shuttleless looms are summarized. (2618)

DENMARK: EUROPEAN FREE TRADE ASSOCIATION PARTNER. J. S. Symonds. Nylon Outlook No. 10: 16-21 (Spring 1961).
The basic features of Denmark as a textile market are examined. (2619)

TEXTILE RESEARCH INST. 31ST ANNUAL MEETING. Textile Bull. 87: 57-61 (May 1961).
Abstracts of the following papers are presented: Effect of radial heterogeneity on fiber properties, by R. W. Singleton; Automatic doffing system for spinning frames and twisters, by R. W. McCullough; Studies of wool fibers relating to minimum-care applications, by J. H. Dusenbury; Problematics in reactive dyeing, by J. E. Wegmann; Some aspects of fatigue in manmade fibers, by W. J. Lyons; Polypropylene textile fibers, by G. S. Hooper; Effect of fiber tension in the resin treatment of cottons, by L. Rebenfeld; and Some new interpretations of the tire cord fatigue phenomenon, by W. G. Klein. (2620)

45TH KNITTING ARTS EXHIBITION. Knitted Outerwear Times 30: 39-95 (Apr. 24, 1961). (2621)

TECHNICAL ASPECTS OF TEXTILE MARKETING IN RELATION TO THE DYEING AND FINISHING INDUSTRY. H. A. Thomas (Courtaulds Ltd). Dyer 125: 619 (Apr. 21, 1961).
As an example of the important role of the dyeing and finishing industry in textile marketing, trials on the preparation, printing, and finishing of rayon/cotton blends are described. (2622)

MARKETING STRATEGY: BASE OF MANAGEMENT DECISIONS. D. L. Brier (Werner Textile Consultants). Knitted Outerwear Times 30: 20, 35 (May 1, 1961). (2623)

COTTON TRADE JOURNAL INTERNATIONAL YEARBOOK, 1960-1961. Cotton Trade Journal, Inc., Memphis, Tenn. 1961. 272 p. $3.00.
This special changing world number has articles on cotton growing, economics, marketing, manufacture, textile machinery, and research in countries all over the world. (2624)

PROPOSED NEW TEXTILE TERM: EXTENSITY. R. J. E. Cumberbirch (Shirley Inst.). (Letter to the editor). J. Textile Inst. 52: P85 (Feb. 1961).
"Extensity" is proposed to replace the term "extensibility" and "breaking extension." (2625)

GENERAL SURVEY OF THE COTTON INDUSTRY OF EGYPT. C. Ellis. Melliand 42, No. 2: 136, 138 (1961). (2626)

INDIAN JUTE INDUSTRY. A. E. Williams. Fibres and Plastics 22: 95-97 (Apr. 1961). (2627)

TRENDS OF THE POLISH TEXTILE INDUSTRY. C. Weimann. Industrie Textile: 13-17 (Jan. 1961). In French. Through BCIRA 41: 1392 (1961).
Statistical figures are given for the production of flax and hemp, silk, artificial and synthetic fibers to show that the Polish textile industry produced in the last few years about 85% more artificial and synthetic fibers than in 1957. (2628)

WHO KILLED COCK ROBIN? J. L. Waldo (Allied Chem. Corp.). Dyestuffs 44: 21-30 (Mar. 1961).
The purpose of this article is to place proper perspective on some of the problems of America's dyestuff industry and the historical background of these problems. Some of the measures being taken to maintain its position in the world market are outlined. (2629)

# PATENT CHECKLIST

**U.S. patents may be obtained from the U.S. Patent Office, Washington 25, D.C., for 25¢ a copy. Photostatic copies of foreign patents are also available. Charges for these photostats are based on the number of pages in the patent.**

## FIBERS A

### Natural fibers A1

APPARATUS FOR SEPARATING FIBERS FROM VEGETABLE PULP. E. Haas, W. Zinser, W. Hagmann, and P. Laukhuf (Germany). USP 2 977 640, Apr. 4, 1961. (2630)

### Manmade fibers A2

PREVENTION OF VINAL FIBER DISCOLORATION DURING IRONING. Kurashiki Rayon KK. BP 862 867, Mar. 15, 1961.
The fibers are treated with alkaline borohydride. (2631)

SYNTHETIC YARN OR FIBER WITH REDUCED STATIC ELECTRICITY. Vereinigte Glanzstoff Fabriken AG. BP 862 963, Mar. 15, 1961.
The distannane or digermanane compounds claimed are added to the polymer spinning solution. (2632)

COMPOSITE CURLED GLASS FIBERS. Owens-Corning Fiberglas Corp. BP 863 099, Mar. 15, 1961.
Two glasses of different coefficients of thermal expansion are combined into individual fibers so that on cooling they contract to different degrees thus imparting a permanent curl to the fibers. (2633)

APPARATUS FOR CONTINUOUS TREATMENT OF FIBERS WITH ORGANIC GASEOUS MATERIALS. T. Takagi (Japan). BP 863 219, Mar. 22, 1961.
Apparatus for the acetylation or acetalization of tows, filaments, staples, and fabrics of natural and rayon fibers in which an inert gas seal is used at the fiber inlet and outlet to prevent the escape of the reaction gas. (2634)

IMPROVING THE DYEING PROPERTIES OF POLYVINYL ALCOHOL FIBERS. T. Osugi, K. Tanabe, and O. Morimoto (to Air Reduction Co. and Kurashiki Rayon Co. Ltd). USP 2 977 183, Mar. 28, 1961.
A method of acetalizing polyvinyl alcohol fibers which improves the dyeability of the fibers while simultaneously rendering them resistant to boiling water is claimed. (2635)

ALL-SKIN VISCOSE RAYON. M. R. Lytton (to Am. Viscose Corp.). USP 2 979 376, Apr. 11, 1961.
The addition of alkali-soluble alkylene oxide adducts of p,p'-isopropylidenediphenol to the spinning bath is claimed. (2636)

## YARN PRODUCTION B

APPARATUS FOR STRETCHING AND TWISTING CONTINUOUS FILAMENT YARN. J. E. Bromley and D. J. Lamb (to Chemstrand Corp.). USP 2 979 882, Apr. 18, 1961. (2637)

DRAFT CUTTING TOW INTO SLIVER. R. Hirako (Japan). BP 852 291, Oct. 26, 1960. Summary in BCIRA 41: 1016 (1961). (2638)

CRIMPED NYLON YARN. G. G. Thomas (to Brit. Nylon Spinners Ltd). BP 852 579, Oct. 26, 1960. Through BCIRA 41: 1053 (1961).
Yarn consisting of or containing incompletely drawn filaments of nylon is false-twisted, drawn at a ratio of at least 2 without heating enough to set the twist, and then allowed to relax to develop crimp. (2639)

IMPROVING THE TEXTILE PROCESSING OF POLYESTER FIBERS. NV Onderzoekingsinst. Research. BP 853 179, Nov. 2, 1960. Through BCIRA 41: 1267 (1961).
Fibers of the Terylene type run smoothly in carding, drawing, combing, and spinning if first treated with a hot solution of an alkali salt of a weak acid (e.g. sodium carbonate, phosphate or stearate, 0.5-10%) preferably containing an anionic surface active agent. (2640)

FALSE TWIST CRIMPING APPARATUS. Heberlein & Co. AG. BP 862 319, Mar. 8, 1961.
The twist tube is supported by axially parallel rollers and driven by rotation of one of the rollers. The tube is maintained in contact with the rollers by magnetic means. (2641)

TEXTILE FIBER LUBRICANT. H. A. Thompson, R. E. Donaldson, and C. C. White (to Eastman Kodak Co.). USP 2 976 186, Mar. 21, 1961.
The use of 2-alkyl-4,4-dimethyl-2-oxazoline salts of lauryl or oleyl phosphoric acid partial esters as lubricants for cellulose ester and synthetic hydrophobic filaments is claimed. (2642)

BLADE CRIMPING APPARATUS. C. G. Evans, A. D. Harmon, and N. E. Klein (to Deering Milliken Research Corp.). USP 2 977 661, Apr. 4, 1961.
Yarn with a high degree of elasticity is obtained by passing the heated yarn over a blade provided with heat dissipating means to exert a cooling influence on the yarn. (2643)

YARN HEATING APPARATUS. C. G. Evans (to Deering Milliken Research Corp.). USP 2 977 663, Apr. 4, 1961.
Electrical means for heating a segment of a running length of yarn and for controlling the temperature by means of solenoids instead of thermostats. (2644)

### Opening, picking, fiber preparation B1

LINT COTTON OPENER AND CLEANER. E. H. Brooks (to Continental Gin Co.). USP 2 977 641, Apr. 4, 1961.
The apparatus consists of a series of saw cylinders for opening and fluffing the lint and doffing means for the saw cylinders which also function to separate out the trash and mote from the fibers. (2645)

APPARATUS FOR PROVIDING LONG, SOFT BAST FIBERS. M. J. Reider (to George W. Bollman & Co.). USP 2 979 781, Apr. 18, 1961.
Ribbons of bark are overlapped on a conveyor belt, crushed, and continuously conveyed through an alkaline soap retting solution. The treated ribbons are then subjected to a scutching action. (2646)

MACHINE FOR CLEANING, DRAFTING, AND PARALLELIZING WOOL FIBERS. A. Boer (to Bancroft-Brillotex Intern. SA). USP 2 979 782, Apr. 18, 1961.
Wool fibers treated with an absorbent powdered detergent are subjected to repeated alternate compressions and draftings while causing frictional rubbing between fibers and detergent by means of spaced, endless belts mounted on rollers. (2647)

## Carding and combing B2

STOP MOTION FOR SLIVER COILING APPARATUS. J. J. Rieter & Cie AG. BP 852 417, Oct. 26, 1960. Through BCIRA 41: 1046 (1961).
The invention includes a control lever that operates an electric switch and is sensitive to changes in the distance between the calender rollers and in the pressure of the sliver in the can. The device thus checks defects in the on-coming sliver, lapping of a calender roller, clogging of the funnel wheel, and overflowing of the can. (2648)

STRIPPING ROLLERS FOR REVOLVING FLAT CARDING ENGINES. R. Hattori (Japan). BP 863 986, Mar. 29, 1961. (2649)

COMBING MACHINES. S. E. Edfors (to Saco-Lowell Shops). USP 2 977 642, Apr. 4, 1961.
Means for applying a reduced air pressure to the leading edge of the sliver to maintain it in intimate contact with the half-lap needles during combing. (2650)

## Drawing and roving B3

FLUTED DRAFTING ROLLS FOR NIP CONTROL. N. Schlumberger & Cie. BP 852 449, Oct. 26, 1960. Summary in BCIRA 41: 1047 (1961). (2651)

STOP MOTION FOR ROVING MACHINE AND ITS ASSOCIATED TRAVELING LINT CLEANER. S. J. Adams. BP 862 056, Mar. 1, 1961. (2652)

SLIVER DRAFTING SYSTEM. Soc. Alsacienne de Constructions Mecaniques. BP 862 139, Mar. 1, 1961.
To reduce fiber winding around the top roll in a drafting system comprising a feeding, gripping, and drafting zone, the diameter of the top roll in the drafting zone is equal to the mean length of the fibers being drafted and that of its corresponding bottom roll is greater than the diameter of any other roll in the system. In addition, the nip points in the drafting zone are spaced at a distance equal to the mean fiber length from the nip points of the gripping zone. (2653)

SLIVER UNIFORMITY DETECTING AND CONTROL ARRANGEMENT FOR PIN DRAFTING MACHINES. R. E. Munford, P. N. Smith, and C. E. Graham (to Deering Milliken Research Corp.). USP 2 980 967, Apr. 25, 1961. (2654)

APPARATUS FOR PRODUCING AND COLLECTING SLIVERS. Hanseatische Motorene-GmbH. BP 862 280, Mar. 8, 1961.
The slivers from several carding machines are collected in a common duct, passed through an automatic thickness control device and an intersecting gill box, and delivered into sliver cans with automatic changeover to secure uniform sliver can weight. (2655)

ROVING MACHINE BOBBIN-AND-FLYER SPINDLE DRIVE. T. M. M. (Research) Ltd. BP 862 774, Mar. 15, 1961.
Each bobbin is rotated by means of a bearing-supported tube driven by a fixed shaft from the traverse rail, and the flyer spindle passes through the tube and is driven from a second shaft. (2656)

SLIVER DRAFTING APPARATUS. J. K. P. Mackie (to James Mackie & Sons Ltd). USP 2 978 753, Apr. 11, 1961.
Time delay mechanism for controlling the draft in accordance with variations in sliver weight or thickness. (2657)

GILL BOX SLIVER DELIVERY UNIT FOR STATIONARY BALLING HEAD. G. Bider (Italy). USP 2 979 276, Apr. 11, 1961. (2658)

CLEARER ASSEMBLY FOR DRAFTING ROLLS. M. G. Whitehurst (to Ideal Inds.). USP 2 979 783, Apr. 18, 1961. (2659)

## Spinning, winding, twisting B4

TEXTILE TWISTING MACHINES. E. Bates (to Prince-Smith & Stells Ltd). BP 852 260, Oct. 26, 1960. Through BCIRA 41: 1049 (1961).
For tensioning yarn as it runs off the supply packages, a wire loop spans between two parallel guide wires that depend from a support and are splayed out at their lower ends to prevent the loop from falling off. The loop rides on the running yarn and rises or falls as the tension varies. (2660)

TWIST CONTROL IN DOUBLING. F. Scragg (to E. Scragg & Sons Ltd). BP 852 297, Oct. 20, 1960. Through BCIRA 41: 1050 (1961).
The balloon is produced in yarn drawn from a second package and the ballooning yarn is caused to be plied with non-ballooning yarn drawn from the package within the balloon. (2661)

THREAD GUIDE AND BOBBIN HOLDER FOR CENTRIFUGAL SPINNING OR TWISTING MACHINES. Neder. Org. voor Toegepast. BP 852 545, Oct. 26, 1960. Summary in BCIRA 41: 1048 (1961). (2662)

RING RAIL DRIVE FOR RING SPINNING MACHINES. Brevets Aero-Mecaniques SA. BP 852 980, Nov. 2, 1960. Summary in BCIRA 41: 1268 (1961). (2663)

HIGH SPEED, FALSE TWIST SPINDLE MOUNTING. E. Scragg & Sons Ltd. BP 862 061, Mar. 1, 1961. (2664)

APPARATUS FOR AUTOMATICALLY CONTROLLING THE WEIGHT PER UNIT LENGTH OF TEXTILE MATERIALS DURING SPINNING. Zellweger Ltd. BP 863 146, Mar. 15, 1961. (2665)

STOP MOTION DROP WIRE FOR SPINNING AND TWISTING MACHINES. S. J. Adams. BP 853 230, Nov. 2, 1960. Through BCIRA 41: 1270 (1961).
The wire consists of a thin metal rod fixed in a relatively large eye made of nylon or other hard-wearing plastic material. (2666)

PLYING MECHANISM. Deering Milliken Research Corp. BP 861 861, Mar. 1, 1961.
In the plying of two or more yarns from separate packages, one of the strands is rotated in a balloon about the supply of the second strand and the tension of the latter is balanced until the ply point is stable. (2667)

STOP MOTION FOR TOP DELIVERY ROLL ON DOUBLING FRAME. Allgauer Maschinenbau GmbH. BP 862 079, Mar. 1, 1961. (2668)

FLYER MOUNTING FOR SPINNING AND TWISTING MACHINES. T. M. M. (Research) Ltd. BP 862 167, Mar. 1, 1961.
A spring-loaded catch and seating for the flyer are provided at the tip of the spindle blade to impose tension on the yarn and to prevent over-running of the flyer when the spindle is stopped. (2669)

SPINDLE DRIVE. T. M. M. (Research) Ltd. BP 862 592, Mar. 15, 1961.
Spindles on each side of the frame derive their motion from separate shafts, each pair of adjacent spindles being driven by a common belt passed around two guide pulleys spaced so that the shafts can be mounted close to the side of the frame and readily accessible from the outside of the machine. (2670)

VERTICAL DRAFTING MECHANISM FOR SPINNING MACHINES. Schiess AG. BP 862 769, Mar. 15, 1961.
The mechanism is subdivided into separate, independent units along the length of the machine, and each separate unit consists of two halves located on opposite sides of the plane of travel of the fibers. The bearing-carrying member of each unit is in the form of a concave, cover-like part which may be opened like a book away from the fibers. (2671)

INDIVIDUAL REVERSIBLE SPINDLE DRIVE. J. J. Rieter & Cie AG. BP 863 600, Mar. 22, 1961. (2672)

HOLDING-DOWN CATCH FOR SPINDLES. T. M. M. (Research) Ltd. BP 863 630, Mar. 22, 1961. (2673)

AUTOMATIC STOP MOTION FOR TWISTING SPINDLE. J. E. Makant and H. Collins (to Collins Brothers Mach. Co.). USP 2 975 584, Mar. 21, 1961.
Device which simultaneously applies a brake to the spindle and disconnects the whorl from the spindle blade. This permits the whorl to move freely with the drive belt, avoiding interference with the other spindles. (2674)

APRON GUIDING AND TENSIONING MEANS FOR CAPBARLESS SPINNING FRAMES. R. K. Butler (to Machinecraft, Inc.). USP 2 977 643, Apr. 4, 1961. (2675)

BALLOON CONTROL FOR UPTWISTERS. D. G. Burnell (to James Lees & Sons Co.). USP 2 981 048, Apr. 25, 1961. (2676)

PNEUMATIC WASTE COLLECTION SYSTEM FOR SPINNING FRAMES. C. R. Harris (to Pneumafil Corp.). USP 2 979 754, Apr. 18, 1961.
Means for increasing the waste-to-air ratio and for reducing the volume of the air stream in a system for handling relatively large volumes of air having a comparatively low lint content. (2677)

SUPPORT AND WEIGHTING MEANS FOR CAPBARLESS TOP DRAFTING ROLLS FOR SPINNING FRAMES. L. M. Cotchett (to Machinecraft, Inc.). USP 2 979 784, Apr. 18, 1961. (2678)

BOBBIN TIP BUNCH BUILDING MECHANISM FOR RING SPINNING FRAMES. H. N. Thibault and W. H. Banks (to Draper Corp.). USP 2 979 881, Apr. 18, 1961.
Device for releasing the ring rail from the builder mechanism to permit it to rise suddenly to a point beyond its normal upper limit of travel to a point adjacent the bobbin tip for applying tip bunches. The ring rail is lowered to its doffing position by foot pedal means, automatically resetting the tip bunch building device. (2679)

RING TWISTING MACHINE FOR TWISTED STRAND TUBING. W. Dewhirst (to Haskell-Dawes Mach. Co.). USP 2 981 050, Apr. 25, 1961.
Twisted strand tubes of uniform roundness and twist are produced by a machine having a ring type takeup, a compressor die for the twisted strand, and a false-twist flyer positioned between them. (2680)

SPINNING SPINDLE BEARING ARRANGEMENT. E. Maurer (Germany). USP 2 981 051, Apr. 25, 1961. (2681)

BOBBIN RETENTION AND BRAKING LOCK DOG DEVICE. A. D. Harmon and N. E. Klein (to Deering Milliken Research Corp.). USP 2 981 496, Apr. 25, 1961. (2682)

## Yarns B5

IMPROVING THE ADHESION OF TIRE CORD TO BUTYL RUBBER. Esso Research & Eng. Co. BP 861 814, Mar. 1, 1961.
Tire cord is coated with a layer of phenol formaldehyde resin-containing rubber latex and then with a brominated butyl rubber cement. (2683)

BULKED YARN PRODUCTION. Heberlein & Co. AG. BP 862 314, Mar. 8, 1961.
Pretwisted synthetic filaments are passed through a rotating false twist mechanism by means of which simultaneous backtwisting and loop formation are effected. The loop formation is caused by frictional contact of the yarn and/or the air vortex effect created by the rotation of the apparatus. (2684)

RIBBED BARREL PLASTIC SEWING THREAD SPOOLS. L. H. Morin (to Coats & Clark Inc.). USP 2 978 202, Apr. 4, 1961. (2685)

BUOYANT CORDAGE. E. W. Weitzel (to Shuford Mills). USP 2 979 982, Apr. 18, 1961.
Cords with a specific gravity of less than one formed of a flexible, foamed polyethylene core and a braided nylon cover are claimed. (2686)

PLIED CORD ROPE CONSTRUCTION. D. Himmelfarb and W. J. Kaes. BP 862 890, Mar. 15, 1961.
Stranded rope resistant to kinking is made by twisting multifilaments to form a yarn, twisting the yarns in the opposite direction to form a cord, and twisting the cords in the opposite direction to form a rope. (2687)

BONDING NYLON TIRE CORD TO POLYURETHANE ELASTOMERS. S. Salem and D. W. Anderson (to Gen. Tire & Rubber Co.). USP 2 976 202, Mar. 21, 1961.
An aqueous solution of a dihydroxy phenol, an aldehyde, and a catalyst are applied to the fabric and the fabric is dried prior to application of the rubber. (2688)

AIR IMPERVIOUS COTTON TIRE CORD FABRIC FOR TUBELESS TIRES. R. C. Koch (to Firestone Tire & Rubber Co.). USP 2 978 784, Apr. 11, 1961.
The cotton cords are dewaxed and impregnated with a water dispersion containing resorcinol, formaldehyde, and terpolymer latex consisting of butadiene, styrene, and vinyl pyridine. (2689)

PROCESS FOR PRODUCING BULK YARN. R. L. Keefe, Jr. (to E. I. du Pont de Nemours & Co.). USP 2 978 788, Apr. 11, 1961.
Stable bulk yarn is produced by applying a high friction, water-sensitive size to producer twist filament yarn, drying the yarn, passing it through a high velocity air jet, winding the resultant bulk yarn, and subjecting the package to warm, humid air to reset the size and stabilize the convolutions. (2690)

COMPOSITE YARN WITH LATENT BULK. J. E. Waltz (to E. I. du Pont de Nemours & Co.). USP 2 979 883, Apr. 18, 1961.
Smooth, composite yarn which becomes permanently bulked by heating after knitting or weaving consists of two plied filaments with differing degrees of irreversible extensibility, e.g. cellulose acetate and polyethylene terephthalate. (2691)

LOCKDOWN FLOATING PLATFORM FOR SPOOLER TROUGHS AND DOFF TRUCKS. J. G. Fisher (to Fisher Mfg. Co.). USP 2 980 287, Apr. 18, 1961. (2692)

YARN DYEING SLEEVE. H. G. Mason (to Barber-Colman Co.). USP 2 980 354, Apr. 18, 1961.
Inward slipping of the yarn along the end portions of a stainless steel perforated sleeve during winding is prevented by means of a groove at the sleeve ends and inner side walls of sufficient depth and inclination to catch the turns of the initially laid on layer of yarn. (2693)

PACKAGE WOUND FROM CONTINUOUS NYLON FILAMENTS. S. Goddard (to Brit. Nylon Spinners Ltd). USP 2 980 362, Apr. 18, 1961.
Oriented nylon filaments are wound on a compressible bobbin so that the end portions form a tapered angle of 15 to 20°. (2694)

DEVICE FOR CURLING FILAMENTS FOR USE AS DOLL HAIR. A. L. Genovese (to Nat. Plastic Prods. Co.). USP 2 980 959, Apr. 25, 1961. (2695)

CAP TWISTING DEVICE FOR MANUFACTURING TIRE CORD IN A SINGLE OPERATION. H. V. Jansen (to Kunstzijdespinnerij Nyma NV). USP 2 981 047, Apr. 25, 1961. (2696)

PROCESS FOR PREPARING POLYESTER YARNS WITH LATENT BULK. W. H. Jamieson and C. E. Reese (to E. I. du Pont de Nemours & Co.). USP 2 980 492, Apr. 18, 1961.
Smooth polyester filament yarns which become bulky on heating, e.g. after knitting or weaving, are prepared directly by melt spinning the polymer through spinnerets at unequal rates of flow to form filaments of different sizes which are formed into a single filament bundle. (2697)

BALER TWINE. R. MacHenry (to Am. Viscose Corp.). USP 2 981 052, Apr. 25, 1961.
The twine consists of several bundles of continuous rayon filaments twisted together and bonded with individual strips of cellophane. (2698)

## FABRIC PRODUCTION C

### Warping, slashing, yarn preparation C1

HIGH-SPEED WINDING MACHINES. E. Brierley (to Leesona Holt Ltd). BP 852 321, Oct. 26, 1960. (Addition to BP 849 971). Through BCIRA 41: 1075 (1961).
In a machine for winding yarn packages from hanks, means for stopping the machine if the yarn breaks or is exhausted, and for applying a brake shoe if the yarn on the swift tends to become entangled. (2699)

WINDING SPINDLE DRIVE. E. Brierley and A. H. Norris (to Leesona Holt Ltd). BP 852 425, Oct. 26, 1960. Through BCIRA 41: 1074 (1961).
Electromagnetic means for driving the winding spindle, controlling its speed irrespective of the diameter of the package, and maintaining constant tension even in very fine filaments or yarns. (2700)

WARP TYING MACHINES. Zellweger Ltd. BP 852 529, Oct. 26, 1960. Through BCIRA 41: 1077 (1961).
Clamping frame for use in tying a finished warp on a loom to a new warp. (2701)

HIGH-SPEED CONE WINDING MACHINES. F. Holt and G. Lee (to Leesona Holt Ltd). BP 852 703, Oct. 26, 1960. Through BCIRA 41: 1076 (1961).
In a winding machine of the traveling-spindle type, the drive to the packages is taken from intermediate rotary traverse cams driven by frictional contact with the driving rollers. This makes it possible to wind at exceptionally high speeds various tapers of cone and to continue winding as the winding heads pass round the semicircular ends of the track. (2702)

HAND KNOTTER. O. B. Engelhardt (Germany). BP 853 226, Nov. 2, 1960. Through BCIRA 41: 1284 (1961).
The special feature of the knotter is that the exterior is free from projections, such as screw connections and ends of the working parts, that might catch the yarn. (2703)

BOBBIN WITH REDUCIBLE BARREL FOR WINDING SYNTHETIC FILAMENTS. Farbwerke Hoechst AG. BP 863 122, Mar. 15, 1961.
The barrel wall is formed by a series of overlapping, striplike elements parallel to the axis of the barrel which slide over each other to reduce the barrel circumference during filament shrinkage in aftertreatments. (2704)

THREAD TENSIONING DEVICE FOR WINDING MACHINERY. C.-G. Rosenkranz, H. Halstenbach, and A. Plutte (Germany). BP 863 083, Mar. 15, 1961.
Pneumatic damping device for retarding the action of a lever operated tension device in the direction of increased tension action in order to prevent excessive tensioning action and concomitant yarn breakage on the passage of knots. (2705)

TUMBLER DETECTOR STOP MOTION FOR USE WITH WARPING AND AXMINSTER SPOOL SETTING MACHINES. T. M. M. (Research) Ltd. BP 863 997, Mar. 29, 1961. (2706)

FILAMENT TENSION CONTROL FOR WINDING APPARATUS. W. Weber and H. Lohest (to Barmer Maschinenfabrik AG). USP 2 978 195, Apr. 4, 1961.
Eddy current slip clutch coupling device for regulating the speed of a filament receiver in accordance with the rate of delivery of filaments to the receiver to maintain uniform tension. (2707)

ROLLER TYPE YARN TENSION DEVICE. T. E. Westall and L. J. Bennis (to Am. Thread Co.). USP 2 978 203, Apr. 4, 1961. (2708)

SYSTEM FOR TESTING AND SORTING COIL CORES FOR AUTOMATIC WINDING MACHINES. H. Beckers (to Walter Reiners). USP 2 980 250, Apr. 18, 1961.
Apparatus associated with the replenishing mechanism which automatically detects and eliminates cores which do not correspond to predetermined dimensions. (2709)

YARN KNOTTER. S. Fürst (to Walter Reiners). USP 2 981 559, Apr. 25, 1961.
Device for tying a fisherman's knot in which the tie beaks release the yarn ends when the individual knots of the yarn ends are looped and closed and before tensioning takes place. This prevents excessive strain in the yarn. (2710)

## Weaving C2

MECHANISM FOR MULTIPLE SHED WEAVING. Metapic SA and Holding Luxembourgeoise. BP 852 467, Oct. 26, 1960. Through BCIRA 41: 1078 (1961).
The heddle frames are driven by a common cam but the levers are adjusted individually or in groups so that the strokes and the warp sheds differ. (2711)

SHUTTLELESS LOOM. NV Machinefabriek L. te Strake. BP 862 093, Mar. 1, 1961.
The weft yarn is pneumatically introduced into the shed by means of compressed air from nozzles located at the side of the warp threads. (2712)

HARNESS MECHANISM. Sdruzeni Podniku Textilniho Strojirenstvi. BP 862 106, Mar. 1, 1961.
Harness construction by means of which the change from warp weave to weft weave may be effected with a single cam. (2713)

WEFT STOP MOTION FOR SHUTTLELESS LOOMS. V. M. J. Ancet and M. Fayolle (France). USP 2 977 996, Apr. 4, 1961.
See abstr. 3984/59. (2714)

WEFT THREAD INSERTION GUIDE. Sulzer Freres SA. BP 862 247, Mar. 8, 1961.
Plastic, beaklike elements which partially encircle the shuttle or weft insertion needles and divide the warp threads in a comblike fashion as they enter and leave the shed. (2715)

POSITIVE DOUBLE LIFT DOBBY MOTION. Staubli Bros. & Co. BP 862 666, Mar. 15, 1961.
The draw hook stops are movably mounted in the dobby frame in such a manner that sufficient play is available for the selective deflection of the draw hooks while preventing the uncertain movements of the heddle shafts. (2716)

HEDDLE FRAME FOR HAND LOOMS. H. C. Frentzel. USP 2 974 686, Mar. 14, 1961.
Each heddle frame is suspended by a series of cables and pulleys with one heddle frame being counterbalanced against another so that all the sheds are evenly tensioned. (2717)

DENT FOR LOOM REEDS. G. A. McFetters (to Greensboro Loom Reed Co.). USP 2 974 687, Mar. 14, 1961.
The friction and static electricity on the warp threads passing through the dents are reduced by the provision of a macroscopically rough surface on the chrome coated dents. (2718)

WARP STOP MOTION. E. Pfarrwaller (to Sulzer Frères SA). USP 2 974 688, Mar. 14, 1961.
Device which effects loom stops in dependence on an irregularity of the warp as well as on a predetermined rotational angular position of the main shaft of the loom. (2719)

LOOM STOP MOTION. W. Harries. USP 2 974 689, Mar. 14, 1961.
Stop motion, particularly for narrow fabric looms, adapted to stop the loom in response to weft yarn breakage or exhaustion. (2720)

CLEANING AND CONDITIONING SYSTEM FOR WEAVE ROOMS. M. S. Fain (to Grinnell Corp.). USP 2 976 558, Mar. 28, 1961.
Rotating air cleaner and moisture evaporator for placement over the intake of a loom cleaner blower. (2721)

NEEDLE PLATE FOR FINE GAGE TUFTING MACHINE. R. T. Card (to Singer-Cobble, Inc.). USP 2 976 829, Mar. 28, 1961. (2722)

SHUTTLE GUIDE FOR CIRCULAR LOOM. J. Rabeux and R. Jacob (to Soc. d'Applications Gen. d'Elect. & de Mecanique). USP 2 976 890, Mar. 28, 1961. (2723)

DRAW HOOK CONTROL FOR LOOM DOBBIES. W. Wicker (to Gebr. Stäubli & Co.). USP 2 976 891, Mar. 28, 1961. (2724)

LOOM WEFT MECHANISM. J. A. Morin (to Textile Develop. & Machy. Ltd). USP 2 976 892, Mar. 28, 1961.
Means for continuously and selectively feeding weft yarns to the shuttle through heddles from a spool. (2725)

OVERHEAD TRAVELING AIR BLOWER FOR CLEANING LOOMS. M. S. Fain (to Grinnell Corp.). USP 2 981 644, Apr. 25, 1961. (2726)

SELECTIVE CAM SHEDDING MECHANISM FOR LOOMS. A. J. Herard, Jr., C. R. Kronoff, and V. F. Sepavich (to Crompton & Knowles Corp.). USP 2 980 145, Apr. 18, 1961. (2727)

HIGH SPEED NARROW LOOM. H. T. O'Neill (to Continental Elastic Corp.). USP 2 980 146, Apr. 18, 1961.
In a loom with a weft insertion needle and a knitting needle for forming a knit selvage on one edge, the weft insertion needle has a bifurcated end so that it straddles the knitting needle while the latter engages the filling thread. (2728)

ELECTRICAL WEFT DETECTOR. A. J. Herard, Jr. and V. F. Sepavich (to Crompton & Knowles Corp.). USP 2 980 147, Apr. 18, 1961.
An adjustable actuator is placed between the side slipping finger of the detector and an arm on the electric switch to prevent a false indication due to loom vibration. (2729)

HARNESS CONTROLLED LOOM STOP MOTION. F. B. Wiseman. USP 2 980 148, Apr. 18, 1961.
Stop motion for automatically stopping the loom in the event of breakage of any of the harness frame connections. (2730)

HARNESS FRAME. E. Nussbaum (to E. Frohlich AG). USP 2 981 293, Apr. 25, 1961.
Clamping element for interconnecting the ends of hollow carrier rods with those of the side stays at the shaft corners. (2731)

AUTOMATIC SHUTTLE CHANGER FOR WIDE CARPET LOOMS. H. J. Smiley, H. A. Batty, and T. W. Jones (to James Lees & Sons Co.). USP 2 981 294, Apr. 25, 1961.
A minimum of interference with pile wire insertion and withdrawal is achieved by positioning the entire mechanism, with the exception of the exhausted filling detector, on the side of the loom away from the pile wire motion. (2732)

LOOM STOP MOTION. F. W. Paul and V. F. Sepavich (to Crompton & Knowles Corp.). USP 2 981 295, Apr. 25, 1961.
In a loom with an electromagnetic clutch and brake, means whereby loom stoppage can be initiated by the weaver but does not take place until a selected point in the loom cycle is reached, e.g. when shuttle picking is completed or lay energy is at a minimum. (2733)

ELECTRIC PROTECTION FOR LOOM. F. W. Paul and D. G. Willard (to Crompton & Knowles Corp.). USP 2 981 296, Apr. 25, 1961.
Electromagnetic means for stopping the loom in the event that the shuttle is running late. (2734)

## Knitting C3

STOP MOTION FOR LACE MACHINES. S. Holdsworth (to Lace Research Assoc.). BP 852 063, Oct. 26, 1960. Through BCIRA 41: 1080 (1961).
In an electric device for detecting and indicating broken and slack threads, each thread is provided with a feeler and a flap-like feeler makes contact with the whole sheet of threads. If one thread fails, its feeler makes contact with the flap, a circuit is closed, and a warning signal or stop motion is operated. (2735)

CIRCULAR HOSIERY MACHINES. Hosiery & Allied Trades Research Assoc. BP 861 879, Mar. 1, 1961.
Device for feeding yarn to the needles at a predetermined rate, in accordance to the machine speed, independent of changes in yarn tension. (2736)

CIRCULAR KNITTING MACHINES. Hosiery & Allied Trades Research Assoc. BP 861 880, Mar. 1, 1961.
Mechanism for positively feeding yarn to the needles at a rate which bears a fixed relation to the machine speed, independent of changes in yarn tension, and for adjusting loop-forming movements to counter tension variations. (2737)

KNIT ELASTIC FABRIC. T. E. H. Royaerts (France). BP 861 977, Mar. 1, 1961.
Fabrics capable of stretching in any direction are knit by the interlock method from a combination of stretch and permanently retractible yarns and are subjected to heat treatment to shrink the retractible yarns and set the fabric in its unstretched condition. (2738)

PRESS-OFF MECHANISM FOR STRAIGHT-BAR KNITTING MACHINES. S. A. Monk and B. A. Monk (to S. A. Monk Ltd). BP 862 942, Mar. 15, 1961.
Means for pressing down the yarn extending between a pressed off article and the yarn guide so that when the yarn guide moves to lay the first course of the next article, the yarn will be engaged by the sinkers and sunk on the needles. (2739)

CIRCULAR HOSIERY MACHINE. Scott & Williams, Inc. BP 863 032 and 863 033, Mar. 15, 1961.
Special sinker movements for the tensioning of rib fabric as it is produced to make possible the knitting of 1 x 1 and 2 x 2 rib tops from bare needles after only 2 courses of preliminary or makeup knitting. (2740)

KNITTING MACHINE LATCH NEEDLE. A. Belz (Switzerland). BP 863 199, Mar. 22, 1961.
The needle has an extension protruding behind the pivot pin which prevents the latch from swinging out of its opened or closed position as long as the needle rests on the needle bed. (2741)

STRAIGHT-BAR KNITTING MACHINES. B. A. Monk (to S. A. Monk Ltd). BP 863 273, Mar. 22, 1961.
Mechanism for producing patterns by loop transferring and which may also be used to produce two diverging lines of eyelet holes along which the fabric can be cut to provide a V-neck opening. (2742)

FABRIC DRAWOFF MECHANISM FOR FLAT KNITTING MACHINE. H. Stoll & Co. BP 863 763, Mar. 29. 1961.
Variation of the drawoff tension is effected by a detector bearing against the fabric between the stitch forming means and the fabric drawoff roller. Variation in the fabric tension causes an electromagnet to shift the position of the weighted lever operating the drawoff roller. (2743)

METHOD OF CLOSING TOE OF CIRCULAR KNIT HOSE. J. L. Getaz (to U.S. Trust Co. of N.Y. and Adams-Millis Corp.). USP Reissue 24 971, Apr. 18, 1961. Original No. 2 787 899, Apr. 9, 1957.
Seamed toe closure produced by sewing the end of the toe-pocket portion to the end of the instep portion without placing the loops of the looper course on the points of the looper dial. (2744)

ELASTIC KNIT PILE FABRIC. Wildman Jacquard Co. BP 863 844, Mar. 29, 1961.
Courses of the base fabric are formed by nonelastic and elastic yarns and the pile at one face of the base fabric consists of staple fiber tufts incorporated into the base fabric along with loops of some of the non-elastic yarn. (2745)

MULTIFEED CIRCULAR HOSIERY MACHINES. Scott & Williams, Inc. BP 863 880, Mar. 29, 1961.
Mechanism for preventing eyelet formation in the transition from multifeed knitting of the toe to single feed rotary knitting of the loopers' course. (2746)

METHOD OF KNITTING COMBINATION PANTY GIRDLE. J. E. Halliday, Jr. and M. H. Faust. USP Reissue 24 970, Apr. 18, 1961. Original No. 2 952 149, Sept. 13, 1960. (2747)

ARGYLE PATTERNING MECHANISM. N. Levin. USP 2 974 505, Mar. 14, 1961.
Four feed circular hosiery machine with means to knit an overplaid design by the use of only four design yarns each of which can be knit in adjacent pattern areas. (2748)

TOE AND HEEL KNITTING ON TWIN FEED MACHINE. R. H. Lawson (to Scott & Williams, Inc.). USP 2 974 506, Mar. 14, 1961.
Idle needles during heel and toe knitting move at a low level and the eyelets formed are closed by tucking certain or all needles put out of action during both narrowing and widening. (2749)

REINFORCED SOLE AND TOE FOR SEAMLESS STOCKINGS. W. J. Foster (to Lenoir Hosiery Mills). USP 2 974 507, Mar. 14, 1961.
The cradle sole has combined with it a reinforcement for the toe which is limited to the walking surface. (2750)

SEAMLESS HOSIERY MACHINES. H. Booton and H. Neal (to W. E. Booton Ltd). USP 2 975 622, Mar. 21, 1961.
Suction means for drawing off fabric from a seamless hosiery machine having an inturned welt mechanism. (2751)

ELASTIC HOSIERY WELT. R. B. Sheek (to Hanes Hosiery Mills Co.). USP 2 977 782, Apr. 4, 1961. (2752)

METHOD OF KNITTING BREAST CUPS IN SWIMSUITS ON FLAT KNITTING MACHINES. I. Crawford and E. J. Boutillette (to M. K. M. Knitting Mills). USP 2 977 783, Apr. 4, 1961. (2753)

SELECTIVE PLAIN AND RIB KNITTING ON STRAIGHT BAR KNITTING MACHINES. N. C. Ladbrooke (to William Cotton Ltd). USP 2 978 888, Apr. 11, 1961. (2754)

HOSIERY TRIMMER. J. W. L. Funchion and C. M. Ginn. USP 2 979 802, Apr. 18, 1961.
The thread ends are cut on a rotating form and the stockings are automatically reversed and discharged by pneumatic means. (2755)

THREAD TENSION DEVICE FOR HAND-OPERATED FLAT KNITTING APPARATUS. H. Schurich (to Karl Steinhof Apparatefabrik). USP 2 981 497, Apr. 25, 1961. (2756)

## Fabrics C4

RESISTANCE HEATER ELEMENTS. J. Sellers and T. E. Peace (to T. French & Sons Ltd). BP 852 157, Oct. 26, 1960. Through BCIRA 41: 1081 (1961).
The tapelike fabric comprises two plies bound together in the weave to provide lengthwise tubelike spaces for the insertion of wires during the weaving. (2757)

APPARATUS FOR SUBDIVIDING PATTERNS IN THE MANUFACTURE OF PILE OR OTHER WOVEN FABRICS. P. W. Robinson. BP 852 279, Oct. 26, 1960. Through BCIRA 41: 1079 (1961).
A gridded pattern is produced by forming an image of a colored master pattern on a translucent screen, superimposing a line grid on the screen so as to form a cartesian grid coincident with the image. The line grid may be one of a set or may be adjusted by optical apparatus. (2758)

WATERPROOF UNWOVEN FIBER STRIPS. E. Elöd and L. von Szentpaly (Germany). BP 852 649, Oct. 26, 1960. Through BCIRA 41: 1123 (1961).
Carded and combed strands of staple fiber are assembled side by side as a fleece, impregnated with a dispersion or emulsion of a thermoplastic resin (of specified viscosity) and heated and pressed into a band, and this is cut into strips. (2759)

FLOOR COVERINGS COMPRISING ADHESIVELY-BONDED FIBROUS FABRIC. Wabor AG. BP 852 874, Nov. 2, 1960. Through BCIRA 41: 1289 (1961).
A carpetlike floor covering is made by cutting used tire carcasses into strips, coating these with a binder of the neoprene type, and sticking them together under infrared radiation. (2760)

COMPOUND FABRICS FOR SEMI-STIFF COLLARS. M. W. Alford and A. R. Brearley (to Brit. Celanese Ltd). BP 853 185, Nov. 2, 1960. Through BCIRA 41: 1288 (1961).
A cellulose acetate fabric is bonded to a layer of polythene, polyvinylidene chloride, Terylene, or nylon by partial fusion. (2761)

SLIP-FREE SYNTHETIC FILAMENTS FOR FISHING NETS. Inventa AG. BP 853 325, Nov. 2, 1960. Through BCIRA 41: 1285 (1961).
The filaments are run through a bath containing polyvinyl alcohol, 3-hydroxy-n-butyraldehyde, an acidic catalyst (e.g. phosphoric acid) and, if desired, rubber, and then forming the synthetic resin by heating. (2762)

WOVEN FABRIC FOR REINFORCED HOSE. Dunlop Rubber Co. Ltd. BP 862 172, Mar. 1, 1961.
The warp and weft yarns lie at an angle of 114° to each other and are cut so that on wrapping they will lie at an angle of 57° to the longitudinal axis of the hose. (2763)

FLEECES OF BONDED FIBERS. R. Dilo (Germany). BP 862 689, Mar. 15, 1961.
Granular bitumen or coal tar pitch is incorporated as a binding agent into the fiber mass by shaking followed by heat softening and pressing or rolling. (2764)

PROCESSING CELLULOSE ACETATE TOW FOR CIGARETTE FILTERS. E. F. Cloutier and S. A. Petersen (to Celanese Corp.). USP 2 978 752, Apr. 11, 1961. (2765)

SANITARY NAPKINS. S. Maw Son & Sons Ltd. BP 862 951, Mar. 15, 1961.
Machine for forming an uncarded lap of textile fibers and slitting it into sections for delivery to a covering machine. (2766)

APPARATUS FOR FORMING PADDING FROM TEXTILE FIBERS. A. E. Callaghan & Son Ltd. BP 862 952, Mar. 15, 1961. (2767)

PAPERMAKERS FELT. Scapa Dryers Ltd. BP 863 508, Mar. 22, 1961.
Multi-ply felt consisting predominantly of a top layer of polyethylene terephthalate, a middle layer of asbestos, and a bottom layer of cotton. (2768)

CURTAIN HEADING TAPE. Thomas French & Sons Ltd. BP 863 638, Mar. 22, 1961.
Increased strength in the hook pockets of the tape are achieved by arranging the warp threads in two groups, one set of which are always on one side of the tape and another set is always on the other side. Two other sets of warp threads alternate from one side to the other so that one set is always part of the hook pocket and the other is always part of the intermediate portions or backs of the hook pockets. The warp threads common to the hook pocket and intermediate portions are arranged in pairs as double ends between single ends weaving alternately into the hook pocket and intermediate portions. (2769)

APPARATUS FOR COUNTING AND SEPARATING SYNTHETIC FILAMENT SUTURES. S. L. Halenar and W. A. Kaepernik. BP 863 725, Mar. 22, 1961. (2770)

METALIZED BANDAGES. G. A. Barth and K. Lohmann (Germany). BP 863 875, Mar. 29, 1961.
See abstr. 2961/60. (2771)

NEEDLE PUNCHING APPARATUS FOR NONWOVEN FABRICS. J. L. Hollowell (to E. I. du Pont de Nemours & Co.). USP 2 974 393, Mar. 14, 1961. (2772)

SHADE CLOTH FOR PLANTS. L. B. Womelsdorf (to Whitfield Spinning Co.). USP 2 974 442, Mar. 14, 1961.
The fabric has reinforced warp and weft stripes whose intersections serve as pin receiving areas and more closely spaced warp stripes at the selvage to serve as a pinning guide. Hairy weft yarns give maximum shading with a minimum number of yarns. (2773)

LOOP PILE TEXTURED CARPETS. O. J. Park and B. U. Cotner (to Magee Carpet Co.). USP 2 974 690, Mar. 14, 1961.
Pile yarns of different twists in alternate relation are carried over gage wires in one direction and then in the opposite direction to give textured effects. (2774)

YARN CARRIER FOR YARN SELECTING MACHINES IN PILE TUFTING. F. C. Rehm (to Magee Carpet Co.). USP 2 975 502, Mar. 21, 1961. (2775)

PRODUCTION OF CELLULOSE STAPLE FIBER BATTING. E. T. Powers (to Celanese Corp.). USP 2 976 601, Mar. 28, 1961.
A batting of acetate staple fibers is interlocked by needling and treated with a saponifying agent to convert the fibers to cellulose. (2776)

WATERPROOF WRAPPING FOR CARPET ROLLS. H. F. Peistrup (to Bemis Bro. Bag Co.). USP 2 975 090, Mar. 14, 1961.
The wrapping consists of two or more plies of paper and burlap laminated by means of asphalt in which the paper layer projects beyond the burlap layer to form a margin for securing the wrapping around the carpet roll with an adhesive strip. (2777)

GLASS FABRIC FOR PLASTIC REINFORCEMENT. C. E. Bacon and M. T. Nemeyer (to Owens-Corning Fiberglas Corp.). USP 2 975 503, Mar. 21, 1961.
Extensible fabric in which either the filling or warp course is composed of progressively overlapping courses of strands of glass filaments with each course terminating in open loops which are adapted to hold plastic and prevent longitudinal displacement during molding. (2778)

TUFTING MACHINERY. J. L. Card (to Singer-Cobble Inc.). USP 2 975 736, Mar. 21, 1961.
Loop shedder for stripping the loop formed in the base fabric from the loop hook and preventing its return into the needle path. (2779)

NONWOVEN GRASS-GROWING FABRIC. P. E. Hansen and R. J. Oace (to Minn. Mining & Mfg. Co.). USP 2 976 646, Mar. 28, 1961.
Compacted tissue web of interlaced rayon staple fibers having grass seeds distributed within it and sized and unified by a water-softenable agglutinant. (2780)

PATTERN CONTROL METHOD FOR WARP KNIT CARPETS. R. S. MacCaffray, Jr. (to C. H. Masland & Sons). USP 2 976 705, Mar. 28, 1961.
Method of selective warp knitting a cut pile, uncut pile, or cut and uncut loop fabric on the same mechanism by the change of a pattern chain. (2781)

SHIPMENT OR STORAGE REEL FOR PILE FABRICS. T. P. Kessler. USP 2 976 987, Mar. 28, 1961. (2782)

NYLON TUBING WITH BRAIDED COVER. R. B. Koch (to Polymer Corp.). USP 2 977 839, Apr. 4, 1961.
The tubing is passed through a bath containing a solvent to plasticize its surface and then through a braiding machine. The braided tubing is then treated to remove the excess solvent and cure the product. (2783)

## FINISHING D

### Chemical processes D1

WATER-SOLUBLE COMPLEXES OF 8-HYDROXYQUINOLINE AS ROTPROOFING AGENTS FOR COTTON. Compagnie Francaise des Matières Colorantes. BP 849 275, Sept. 21, 1960. Summary in BCIRA 41: 496 (1961). (2784)

WASHABLE RESIN FINISHES. J. A. Moyse and G. Williams (to Imp. Chem. Inds. Ltd). BP 849 368, Sept. 28, 1960. Through BCIRA 41: 490 (1961).
Washable finishes are produced by adding to the finishing agent (starch, polyvinyl alcohol, gelatin, 4-octadecylaniline, the reaction product of stearic acid and tetraethylenepentamine, or octadecylbiguanide) a mono- or di-halogeno-1:3:5-triazine that is non-fluorescent, free from chromophoric groups and incapable of self-condensation, and baking the impregnated fabric. (2785)

RESIN FINISHING OF CELLULOSE. A. Bennett and D. W. Heywood (to Brit. Industrial Plastics Ltd). BP 849 411, Sept. 28, 1960. Through BCIRA 41: 489 (1961).
A hydrophilic finishing agent (starch, gelatine, carboxymethylcellulose, polyvinyl alcohol) is mixed with a urea/formaldehyde condensate such that, on dilution, this condensate is thrown out of solution in the presence of the colloid. The diluted mixture is used to impregnate fabrics in the production of washable, stiff, embossed, and glazed finishes. (2786)

TREATMENT OF CELLULOSE MATERIALS. W. P. Ericks (to Upson Co.). BP 849 522, Sept. 28, 1960. Through BCIRA 41: 491 (1961).
Cellulosic fabrics are rendered dimensionally stable in atmospheres of fluctuating relative humidity by impregnating them with an ammonium or amine salt of a polycarboxylic acid, or hydroxycarboxylic acid, or the polyhydric partial ester of a polycarboxylic acid so that the fabric contains 5-50% of the organic compound after driving off the base. (2787)

BLEACHING OF VISCOSE RAYON YARNS AND FILAMENTS. R. D. Speir (to T. M. M. (Research) Ltd). BP 849 858, Sept. 28, 1960. Through BCIRA 41: 477 (1961).
The material is successively treated with an acid (e.g. 11-13% sulfuric acid at 60-80° C), acidified permanganate (for 1-20 sec) and acidified hydrogen peroxide. (2788)

FABRIC LIQUID TREATMENT BATH. R. Coburn (to Flaxall Prods. Ltd). BP 849 927, Sept. 28, 1960. Through BCIRA 41: 483 (1961).
The fabric is carried in festoons around a set of top and bottom rollers in the bath. The bottom rollers are in stationary bearing but the top ones are mounted on a carrier that can be reciprocated to and fro. The tension in the fabric is kept constant by means of variable speed feed rollers. (2789)

SOIL RESISTANT TREATMENT OF HYDROPHOBIC FILAMENTS AND FIBERS. W. Glen (to Imp. Chem. Inds. Ltd). BP 850 169, Sept. 28, 1960. Through BCIRA 41: 682 (1961).
Hydrophobic materials (e.g. Terylene) are mangled through caustic soda (5%), padded with an oleophilic agent (Cirrasol, Lubrol, Lissapol or Zelec), heated, washed, and dried. The material acquires antistatic properties, is less easily soiled, may be washed clean, and has a greater affinity for dyes. (2790)

MODIFIED UREA FORMALDEHYDE RESINS. E. P. Wenzelberger (to Commonwealth Eng. Co.). BP 850 534, Oct. 5, 1960. Through BCIRA 41: 680 (1961).
In order that resins of the urea/aldehyde type can be set at relatively low temperatures (e.g. 140-150° C), dextran is dissolved in hot glycerol or glycol, reacted with an unsaturated polycarboxylic acid or anhydride, and the resultant dextran-modified alkyd resin is blended with the urea/aldehyde/alcohol condensate. (2791)

IMPROVING THE ABRASION RESISTANCE OF CELLULOSE OF FIBERS, FILAMENTS, AND TEXTILES. Farbenfabriken Bayer AG. BP 851 289, Oct. 12, 1960. Through BCIRA 41: 858 (1961).
Cotton or rayon materials (hosiery and fabrics) are treated with an emulsion or organic solution of a mixture of a polyester and a polyamide, and then dried and baked. The result is high resistance to abrasion coupled with rapid drying. (2792)

FLAME-SPRAYING RESINS ONTO FABRICS FOR USE IN LAMINATES. H. P. Barns. BP 850 791, Oct. 5, 1960. Summary in BCIRA 41: 681 (1961). (2793)

RADIATION RESISTANT COATED CLOTH, PLASTIC, OR OTHER PLIABLE MATERIAL. W. Treuherz, S. Wolstenholme, and S. Hallowell (to Everglades Ltd). BP 851 479, Oct. 19, 1960. Through BCIRA 41: 861 (1961).
The fabric or screen has an inner layer of plastic containing powdered lead or tungsten or one of their salts. The outer material (or both if there are three layers) may be textile fabric (e.g. nylon, Terylene, or glass fiber). (2794)

RADIATION-ABSORBING PROTECTIVE MATERIALS. K. Reinig (Germany). BP 851 602, Oct. 19, 1960. Through BCIRA 41: 862 (1961).
A lead salt is dispersed in a fat or synthetic rubber. It may be applied as a skin dressing or spread on a textile fabric. Alternatively, the lead salt may be deposited in a fabric by double decomposition, and a fireproofing agent may also be applied. Protection of laboratory and x-ray workers is the purpose. (2795)

APPARATUS FOR LIQUID TREATMENT OF LOOSE FIBROUS MATERIALS. J. E. Fleissner, H. Fleissner, and G. Fleissner (Germany). BP 851 644, Oct. 19, 1960. Through BCIRA 41: 853 (1961).
Loose fiber, sliver, or yarn is processed on the surface of a perforated drum that rotates in the liquor or wash water. The drum is divided into two chambers, one of which communicates with a suction device so as to hold the material to the drum while in the liquid, and the other with a blowing device to lift it off as the drum emerges from the liquid. (2796)

COATING POLYESTER OR POLYAMIDE FABRICS. Imp. Chem. Inds. of Australia & New Zealand Ltd. BP 852 499, Oct. 26, 1960. Through BCIRA 41: 1121 (1961).
The invention relates to an undercoating for polyamide and polyester fabrics on which to apply polyvinyl chloride and similar coatings. A typical composition is butadiene/acrylonitrile copolymer rubber, 12-22%; a tri-polymer of vinyl chloride, acetate and alcohol, 1-3%; chlorinated rubber, 3-7%; a plasticizer, 2-3%; an organic tri-isocyanate, at least 7% on the weight of solids, and solvent. (2797)

INCREASING THE SAFE IRONING TEMPERATURE OF CELLULOSE TRIACETATE FABRICS. G. F. Bull, R. J. Mann, M. W. Alford, and B. Krzesinski (to Brit. Celanese Ltd). BP 852 729 and 852 730, Nov. 2, 1960. Through BCIRA 41: 1317 (1961).
(1) The fabric is treated with an ester or ether-ester of a polyhydric alcohol followed by steaming. (2) The fabric is impregnated with a swelling agent (benzyl alcohol or γ-butyrolactone) and run through a hot metal bath of the Standfast type. (2798)

FABRIC TENSION CONTROL. Benteler Werke AG. BP 853 157, Nov. 2, 1960. Through BCIRA 41: 1310 (1961).
The textile fabric is run in festoon form through the machine (washing, hot-air drying, etc.) and the set of bottom rollers is mounted on a frame for movement up and down. The frame is connected to one arm of a double-armed lever and the weight of the frame and rollers is balanced by a weight on the other arm. Any rocking movement of the lever operates a regulator in the circuit of the motor that drives the rollers. (2799)

APPARATUS FOR USE IN CONTACT WITH ACID CHLORITE SOLUTIONS. Deutsche Gold und Silber Scheideanstalt. BP 852 900, Nov. 2, 1960. (Addition to BP 817 615). Through BCIRA 41: 1311 (1961).
Aluminum alloys containing small proportions of Cu, Mg, Mn, Si, Fe, Zn, and Cr (total, up to about 5%) are fabricated into apparatus and superficially oxidized by the electrolytic method. See abstr. 2199/60. (2800)

IRRADIATION TREATMENT OF NYLON TO REDUCE SHRINKING TENSION. NV Onderzoekingsinst. Research. BP 852 954, Nov. 2, 1960. Through BCIRA 41: 1273 (1961).
The shrinking tension is greatly reduced without serious loss in tensile strength by applying a swelling agent (e.g. water) so that not more than 25% of the agent is taken up, and then exposing the swollen material to ionizing rays, especially electrons. (2801)

CREASE RESISTANT TREATMENT OF VISCOSE FABRICS. R. S. Mahomed (to Courtaulds Ltd). BP 852 962, Nov. 2, 1960. Through BCIRA 41: 1316 (1961).
Viscose fabric is rendered crease shedding, i.e. the dry fabric loses any crease marks on wetting, by impregnating it with ethylenediamine, stretching by 30-50% of its relaxed area, and washing and drying it under tension. (2802)

PYRROLE DERIVATIVES AS OPTICAL BRIGHTENING AGENTS. Ciba Ltd. BP 853 129, Nov. 2, 1960. Summary in BCIRA 41: 1312 (1961). (2803)

REDUCING THE LUSTER OF ACETATE RAYON. R. J. Mann and J. Biedawski (to Brit. Celanese Ltd). USP 2 974 065, Mar. 7, 1961.
The material is impregnated with an aqueous solution of a melamine formaldehyde condensate, an organic acid acting as a catalyst, and a nonionic dispersing agent and heated while wet. (2804)

ANTISTATIC AGENTS FOR SYNTHETIC FIBERS. K. Macura and E. Siggel (to Vereinigte Glanzstoff Fabriken AG). USP 2 974 066, Mar. 7, 1961.
The ampholytic reaction products of polyalkylene glycol alkyl orthophosphoric acid esters with an alkyl or alkylol amine are claimed. (2805)

CONTINUOUS HARDENING AND FULLING MACHINE. R. R. Walton. USP 2 974 394, Mar. 14, 1961. (2806)

TREATMENT OF LAND FOWL FEATHERS WITH WERNER-TYPE CHROMIUM COMPLEXES TO INCREASE FLUFFINESS. A. Schubert, G. Cohen, R. M. Delcamp, and R. M. Lollar (to U.S. Secy. Army). USP 2 975 018, Mar. 14, 1961. (2807)

SHRINKPROOFING WOOL TEXTILES WITH POLYEPOXIDES AND HYDRAZINE. T. J. Coe (to U.S. Secy. Agri.). USP 2 975 077, Mar. 14, 1961.
Shrink resistant wool with unimpaired hand is obtained by impregnation with a polyepoxide followed by curing with hydrazine to insolubilize the polyepoxide. (2808)

METALLIC SELENIDES FOR ROTPROOFING OUTDOOR CELLULOSIC TEXTILES. R. J. Brysson and W. A. Reeves (to U.S. Secy. Agri.). USP 2 977 250, Mar. 28, 1961. (2809)

APPARATUS FOR WASHING RAW WOOL. S.-O. Lundgren (to Stiftelsen Svensk Textilforskning). USP 2 975 625, Mar. 21, 1961.
The wool is placed on a perforated vibrating bed and the washing fluid is pumped continuously through a series of sprinkling nozzles onto the wool. (2810)

APPARATUS FOR COATING CONTINUOUS GLASS FILAMENTS. W. P. Warthen (to Owens-Corning Fiberglas Corp.). USP 2 976 177, Mar. 21, 1961. (2811)

WATERPROOFING COMPOSITION. R. Heyden and H. Wedell (to Böhme Fettchemie GmbH). USP 2 977 249, Mar. 28, 1961.
Condensation products of metal alcoholates and phosphoric acid esters of organic hydroxyl compounds are claimed. (2812)

OPTICAL BRIGHTENING AGENTS FOR POLYACRYLONITRILE OR POLYVINYL CHLORIDE FIBERS. F. Ackermann and A. E. Siegrist (to Ciba Ltd). USP 2 977 319, Mar. 28, 1961. (2813)

DIMENSIONAL STABILIZATION OF CELLULOSE. W. P. Ericks (to Upson Co.). USP 2 977 331, Mar. 28, 1961.
Stretching or shrinking of cellulose materials, e.g. paper, fiberboard, or fabrics, due to changes in humidity can be prevented by impregnation with a salt of a hydroxyl-containing organic basic nitrogen compound and a partial ester of a polyhydric alcohol and polycarboxylic acid. (2814)

APPARATUS FOR IRRADIATION OF TEXTILE MATERIALS. P. Kassenbeck (to Inst. Textile de France). USP 2 977 475, Mar. 28, 1961.
Improved tensile and bursting strength and wear resistance in yarns and fabrics are produced by exposing fiber material (in the form of raw fibers, yarns, or fabrics) to the action of a high voltage ionizing discharge for a predetermined period of time. (2815)

## Dyeing and printing D2

WASH AND BOILPROOF FIXATION ON CELLULOSE OF AZO DYES. W. Rohland, W. Mesch, J. Eisele, and W. Federkiel (to Badische Anilin und Soda Fabrik AG). BP 848 776, Sept. 21, 1960. Summary in BCIRA 41: 484 (1961). (2816)

PRINTING OF CELLULOSE FABRICS WITH VAT AND SULFUR DYES. J. Griffiths and W. G. Harland (to Brit. Cotton Ind. Research Assoc.). BP 848 792, Sept. 21, 1960. Through BCIRA 41: 488 (1961).
In a two-phase printing process the fabrics are passed around a system of heated, rotating cylinders under an endless band of fluid-tight material to assure adequate fixation of the reduced dye. (2817)

DYEING PROCESS FOR POLYAMIDES AND ACRYLONITRILE POLYMERS. J. R. Atkinson, G. Booth, E. L. Johnson, and W. P. Mills (to Imp. Chem. Inds. Ltd). BP 850 977, Oct. 12, 1960. Through BCIRA 41: 855 (1961).
Fast dyeings on nylon and Acrilan are given by dispersions of anthraquinone dyes that contain at least one halogenoalkoxy or halogenoalkylamino group attached to the nucleus either directly or through an alkoxy, alkylamino, or arylamino link. (2818)

APPARATUS FOR DYEING SLIVERS. Kammgarnspinnerei Kaiserslautern. BP 848 821, Sept. 21, 1960. Through BCIRA 41: 482 (1961).
The sliver is packed in the space between a perforated central tube and a perforated container under a cover which is loaded by a cylinder and piston device or a compression spring so that the cover moves in response to any change in volume of the sliver during dyeing. (2819)

DYEING ACRYLIC FIBERS. Ciba Ltd. BP 849 532, Sept. 28, 1960. Through BCIRA 41: 485 (1961).
Level dyeings on acrylonitrile polymers and copolymers with basic dyes are obtained by the use of a quaternary ammonium salt containing at least two quaternary N atoms and at least one, but preferably two $C_{12}$-$C_{18}$ alkyl groups. (2820)

OIL-IN-WATER PRINTING EMULSIONS. J. Paul (to United Merchants & Mfrs. Inc.). BP 850 109, Sept. 28, 1960. Through BCIRA 41: 679 (1961).
In emulsions for printing by the direct or discharge method, the inner phase consists of a volatilizable hydrocarbon and the water phase contains a formaldehyde-sulfoxylate reducing agent protected against oxidation by an alkaline solution of casein and/or soya bean protein. (2821)

INCREASING DYEABILITY OF POLYACRYLONITRILE FIBERS. Gevaert Photo Producten NV. BP 850 116, Sept. 28, 1960. (Addition to BP 786 960 and 833 204.) Through BCIRA 41: 677 (1961).
Acrylonitrile polymers and copolymers are made to react with hydroxylamine and then boiled with an acid (e.g. N-sulfuric acid) and with a base (e.g. 1% ethylenediamine). (2822)

DYE COMPOSITIONS FOR THE PRINTING OF TEXTILE FABRICS. L. Mühleisen. BP 850 310, Oct. 5, 1960. Through BCIRA 41: 678 (1961).
The dye is made up into a paste that sets solid. The printing blocks (preferably for attachment to a cylinder) are cut, punched, or carved out of these slabs. (2823)

COLORING OF CELLULOSE TRIACETATE. H. C. Olpin and C. H. Kirkham (to Brit. Celanese Ltd). BP 850 365, Oct. 5, 1960. Through BCIRA 41: 676 (1961).
The dye is made into solution in aqueous acetone containing a thiocyanate and, if desired, alcohol. (2824)

IMPROVED DYE FASTNESS. W. F. Beech, D. A. Garrett, and H. R. Hadfield (to Imp. Chem. Inds. Ltd). BP 850 857, Oct. 12, 1960. (Addition to BP 825 017). Through BCIRA 41: 854 (1961).
Compounds of the type of 2:4-dichloro-6-o-chloroanilino-1:3:5-triazine are claimed as agents for increasing the fastness of dyeings on cellulose acetate and triacetate, nylon, and Terylene and Kodel polyesters. (2825)

MULTICOLOR PRINTING MACHINES. W. Stafford (to Mather & Platt Ltd). BP 851 168, Oct. 12, 1960. Through BCIRA 41: 856 (1961).
Means for securing accurate register of several printing rollers driven from a helical toothed crown wheel through pinions, the adjustments being made by varying their axial relationships. (2826)

DYEING OLEFIN FIBERS WITH RESIN SOLUTIONS OF FAT-SOLUBLE DYES. Farbwerke Hoechst AG. BP 862 233, Mar. 8, 1961. (2827)

HYDRAULIC WEIGHTING FOR PRINTING MACHINE ROLLERS. W. Stafford (to Mather & Platt Ltd). BP 852 429, Oct. 26, 1960. Through BCIRA 41: 1120 (1961).
Arrangement of the cylinder and piston means for loading the ends of a printing roller so that the roller moves uniformly into contact with the impression cylinder, the full load then comes on, and, after engagement, the hydraulic device returns the roller to its disengaged position. (2828)

POLYETHOXY QUATERNARY AMMONIUM COMPOUNDS AS LEVELING AND STRIPPING AGENTS FOR DYESTUFFS. Sandoz Ltd. BP 852 548, Oct. 26, 1960. Through BCIRA 41: 1119 (1961).
Diamines of the formula $R \cdot NH \cdot C_3H_6 \cdot NH_2$ (R is alkyl, $C_8$ to $C_{22}$) are treated with ethylene oxide and similar hydroxyethylating agents to give leveling and stripping agents. (2829)

MEANS FOR DYEING TEXTILE ARTICLES. F. R. Frenzel. BP 852 560, Oct. 26, 1960. Through BCIRA 41: 1118 (1961).
The invention relates particularly to means for emphasizing certain rounded parts of stockings, bathing costumes, etc., by shaded dyeing. The article is drawn on a support frame, given inverted U or V shapes by applying cooperating elongated members from inside, and only these parts are immersed in the dye bath. (2830)

DYEING AND PRINTING PROCESS FOR POLYACRYLONITRILE AND ACRYLONITRILE COPOLYMER FIBERS. Sandoz Ltd. BP 853 217, Nov. 2, 1960. Through BCIRA 41: 1314 (1961).
The materials are colored with disperse dyes free from anionic dispersing agents, in the presence of cationic dispersing agents containing a quaternary ammonium group. (2831)

PRODUCTION OF SCREEN POSITIVE FILMS FOR ETCHING TEXTILE PRINTING ROLLERS. F. Thenhalter (Austria). BP 862 510, Mar. 8, 1961. (2832)

MANUFACTURE OF WATER-INSOLUBLE AZO DYES. Ciba Ltd. BP 862 565, Mar. 15, 1961.
Deep and fast dyeings are produced by the water-insoluble azo dyes claimed by the use of a foularding bath having a swelling action on the textile, so that the dye penetrates into the fiber, followed by fixation with a strongly basic substance and a weakly to moderately polar liquid. (2833)

DYEING CELLULOSE FIBERS WITH AZO DYES CONTAINING A TRIAZINE NUCLEUS. Ciba Ltd. BP 863 155, Mar. 15, 1961. (2834)

DYEING PROCESS FOR CELLULOSE ACETATE AND TRIACETATE. Brit. Celanese Ltd. BP 863 207 and 863 208, Mar. 22, 1961.
Acetate (863 207) and triacetate fibers (863 208) can be dyed with acid, metalized azo, or azo-methine dyes by short contact with a solution of the dye in a mixture of water, a lower fatty alcohol and acid, and sulfuric acid. (2835)

PRINTING PASTE. Ciba Ltd. BP 863 216, Mar. 22, 1961.
The use of 4-arylazo-1-amino-7-hydroxynaphthalene as a coupling agent for a stabilized diazoamino compound under neutral steaming conditions is claimed. (2836)

DYEING POLYESTER FIBERS WITH AZO DYES INSOLUBLE IN WATER. Farbwerke Hoechst AG. BP 863 329, Mar. 22, 1961.
Diazo dyeings are produced by applying an arylamide of an aromatic or heterocyclic orthohydroxy carboxylic acid or of an acylacetic acid which contains a diazotizable amino group, and diazotizing the compound to bring about self-coupling. (2837)

PNEUMATIC PRESSURE CONTROL MEANS FOR PRINTING MACHINE DOCTOR BLADES. Gillet-Thaon Etab. BP 863 426, Mar. 22, 1961. (2838)

LABORATORY DYEING APPARATUS AND TEST PIECE CARRIERS FOR THE APPARATUS. Ciba Ltd. BP 863 608, 863 609, and 863 610, Mar. 22, 1961. (2839)

PROCESS FOR COLORING CELLULOSE WITH REACTIVE TRIAZINE DYESTUFFS. P. W. Barker, R. N. Heslop, V. D. Poole, and W. E. Stephen (to Imp. Chem. Inds. Ltd). USP 2 978 289, Apr. 4, 1961. (2840)

DYEING ACRYLIC FIBERS WITH TRIAZENE DYES. W. Bossard and J. Voltz (to J. R. Geigy AG). USP 2 978 290, Apr. 4, 1961. (2841)

APPARATUS FOR HIGH TEMPERATURE DYEING OF CLOTH IN ROPE FORM. V. T. Fahringer (to Burlington Inds.). USP 2 978 291, Apr. 4, 1961. (2842)

CARPET DYE KETTLE. W. K. Cutten and J. McNutt (to James Lees & Sons Co.). USP 2 979 934, Apr. 18, 1961.
Edge control device for feeding more than one length of carpet simultaneously through the dye kettle. (2843)

WATER-IN-OIL EMULSION PRINTING PASTE FOR PHTHALOCYANINE PRECURSORS. R. J. Summerill (to E. I. du Pont de Nemours & Co.). USP 2 980 487, Apr. 18, 1961.
The alkali-permeable alkyd resin used in conjunction with pine oil as an emulsifying agent acts as a bonding agent during printing and is removed by the action of the alkaline reducing bath during steaming. (2844)

## Mechanical processes D3

PRESSES FOR TEXTILE ARTICLES. A. L. Smith (to I. Braithwaite & Son (Drysalters) Ltd and Dunlop Rubber Co. Ltd). BP 848 662, Sept. 21, 1960. Through BCIRA 41: 525 (1961).
A resilient pad for one of the platens of a laundry press is made of silicone foam rubber, hot pressed to a constant thickness. (2845)

TROLLEY FOR CONVEYING FABRIC ROLLS FROM ONE PROCESSING STATION TO ANOTHER. E. Kusters (Brazil). BP 849 764, Sept. 28, 1960. Summary in BCIRA 41: 479 (1961). (2846)

APPARATUS FOR SLITTING WIDE ROLLS OF FABRIC TO FORM BIAS BINDING. Lever Bias Mach. Corp. BP 863 518, Mar. 22, 1961. (2847)

CARDBOARD REEL FOR BOLTS OF FABRIC. A. B. Clark, Jr. USP 2 981 406, Apr. 25, 1961. (2848)

## Drying, setting, conditioning D4

HOT AIR DRYING APPARATUS. Famatex GmbH. BP 849 633, Sept. 28, 1960. Through BCIRA 41: 499 (1961).
A chamber with nozzle slots is bent into the form of a hairpin and the fabric is run between the two legs, encountering the hot air on both faces. The chamber decreases in cross-section from the feed end to the open exhaust end. (2849)

HEAT SETTING APPARATUS FOR TWISTED YARNS. C. R. Jones and C. L. Hilton (to Brit. Nylon Spinners Ltd). BP 850 080, Sept. 28, 1960. Through BCIRA 41: 620 (1961).
The yarn is drawn through an insulated heating jacket that provides two heating zones. In the first the temperature is much above that required for the treatment proper but the yarn is exposed only long enough to warm it up without damage. The main zone is at the treatment temperature. (2850)

MACHINES FOR THE DRYING OR HEATING OF TEXTILE FABRICS. J. Walsh (to F. Smith & Co. (Whitworth) Ltd). BP 850 859, Oct. 12, 1960. Through BCIRA 41: 863 (1961).
The fabric passes through a chamber, the walls of which are adjustable, in a shower of hot particles from a fluidized bed. The particles are circulated again. (2851)

HEAT SETTING APPARATUS FOR TEXTURED YARNS. Heating Elements Ltd. BP 862 002, Mar. 1, 1961. (2852)

CONTINUOUS HEAT SETTING APPARATUS FOR TUBULAR KNIT FABRICS. D. M. Yuill and D. R. Graham (to Wolsey Ltd). BP 862 301, Mar. 8, 1961. (2853)

PIN ATTACHMENT FOR CLIP TENTERING MACHINE. Spooner Dryer & Eng. Co. Ltd. BP 863 825, Mar. 29, 1961.
A plate supporting tenter pins is adapted to be engaged between the tenter clip gripper plate and platform. (2854)

# MILL MANAGEMENT F

## Plant and equipment F2

TRAVELING BLOWER FOR REMOVING LINT FROM TEXTILE MACHINES. C. L. Fell (to Am. MonoRail Co.). USP 2 974 342, Mar. 14, 1961.
An overhead blower is provided with straight tubes extending downward so as to direct air streams at various angles through the underframes of the machines. (2855)

SUCTION CLEANING SYSTEM FOR TEXTILE MACHINERY. F. Reiterer (to Parks-Cramer Co.). USP 2 977 181, Mar. 28, 1961.
In order to minimize the power requirement of a cleaner comprising a series of chambers extending over the entire length of a textile machine, intermittent suction is produced at each of a series of air inlets. (2856)

TRAVELING BLOWER CLEANER FOR TEXTILE MACHINERY. J. F. King, Jr. (to Bahnson Co.). USP 2 976 557, Mar. 28, 1961. (2857)